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EVALUATION OF ARDA PROJECTS
IN CENSUS DIVISION 14



by

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A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES
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The undersigned certify that they have read, and recommend
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ABSTRACT

Since 1964, four major socioeconomic development projects have been instituted in Census Division 14 by the Agricultural and Rural Development Act (ARDA) Office in Edson. In evaluating these specific projects: namely, the Lions' Tourists Campsite; Home Visitors' Program; Farm or Woodlot Enlargement, Consolidation, and Mobility Project; and Rehabilitation Program-an evaluation scheme for regional development programs is presented.

A static evaluation is made of the development in the region from the time of the initiation of the ARDA projects to end of 1966. On the basis of this study the success or failure of ARDA policies is determined. Remedial alternatives are also presented when policies have proven ineffective.

Primarily the evaluation involves comparing initial regional socioeconomic status with the socioeconomic status after two years of exposure to various ARDA activities to determine the degree of impact of the regional development program. In some cases an estimation is made by benefit-cost analysis of the productivity of ARDA funds invested in the region. In long-range projects statistical data are used to project performances to enable dynamic continuing evaluations for future regional development.

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CHAPTER I

INTRODUCTION

Projects and programs intended to improve the socioeconomic welfare of people are universally recognized as important. Most developed nations undertake large-scale development projects and incur high expenditures both at home and abroad. Primarily these projects create socioeconomic changes but in addition, changes occur in psychological, educational, technological, and political conditions.¹ Political leaders and taxpayers are satisfied only if they find that their funds cause some significant improvements. Therefore, there is a need for a formal well-documented evaluation of these projects.

Since the institution of the Agricultural and Rural Development Act (ARDA) in 1964, many development projects have been initiated in Census Division 14. This study is concerned with the efficiency and effectiveness of these projects. Once the projects have been evaluated according to certain standards, it will be possible to determine the position of ARDA as an economic institution.²

Objective

The principal objective of this study is to evaluate the work of the ARDA agency in Census Division 14. A study of specific changes

¹For detailed study see Samuel Hayes (53), pp. 13-14.

²The agricultural growth as related to ARDA activities is described in Appendix I. The government agencies involved in the socioeconomic development of Census Division 14 are reviewed and two of these agencies selected for further description in Appendix II.

in economic and social conditions resulting from individual projects forms the basis of evaluation.

Sources of Data

Primary data for the study were obtained from a series of personal interviews with officials of ARDA in Edson and various federal and provincial government departments in the region. Secondary data was collected from both published and unpublished departmental documents, research studies and reports, and confidential correspondence. Additional supporting information was obtained from published reports of the Farm Economics Branch of the Department of Agriculture and Dominion Bureau of Statistics.

Methodology

Achievements of the ARDA agency in Census Division 14 are evaluated in four steps. First, the projects are described with special emphasis on objectives, project environments, time spans, and administrative and executive staff. Secondly, an account of the project performance is given. Third, the costs and revenues of the projects are described. Finally, the data collected in the previous three stages are analysed and conclusions drawn regarding the effectiveness of the programs.

Limitations

In evaluating the work of these programs and agencies various problems arose. At the time of this evaluation all of the programs had been in operation a maximum of two years. This time span was insufficient to measure the ultimate progress of any of the programs. Also the programs had not established general goals; therefore, there was little on

which to base the measurement of achievement. In addition a lack of recorded data in progress reports necessitated personal interviews that were sometimes inaccurate. Each of these factors placed limitations on the evaluation, thereby affecting the results obtained.

CHAPTER II

DESCRIPTION OF CENSUS DIVISION 14 AND ARDA

Census Division 14

Census Division 14 is located west of Edmonton in West Central Alberta. The 11,760 square mile area is bordered on the west of Jasper National Park, east by the Pembina River, north by Athabasca River, and south by the North Saskatchewan River. The boundaries of the region are exterminous with Improvement Districts 78, 79, 95, 96, and approximately the southern half of Improvement District 109.

Within the region there is a great variety of topographic features. In the western part of the region mountainous terrain is common with elevations exceeding 8,500 feet. To the east, however, the land is generally undulating, and elevations are generally between 2,500 and 3,500 feet above the sea level. Major portions of the land area are covered by forests, and the soils are predominantly of the dark grey and dark grey wooded variety. The estimated arable land is less than a quarter of the area, while the remainder is suitable for pasture or woodland. The region is drained by a network of rivers: the Athabasca, Berland, Brazeau, Mcleod, North Saskatchewan, Pembina and Wildhay. There are numerous lakes, the largest of which is Chip Lake. The climate of the region is characterized by long severe winters and relatively short warm summers. The average rainfall, May to September, is 13 to 15 inches; 55 inches of snow falls during the winter months.

Climate has great bearing on land use. Here precipitation averages 20 to 22 inches for a normal year throughout most of the region. Monthly and annual temperature averages indicate that there are generally 60 to 80 frost free days in a year, critically close to the minimum required

for grain to reach maturity. Moisture is in abundance, even in excess in some years. Late springs and early autumn frosts are major hazards to crop production, particularly in the area west of Edson and in the low-lying areas in the eastern part of the region.

Initial development at the turn of the century centered around the lumber industry; large, thriving saw and planing mills were established throughout the area. However, timber was felled indiscriminately, and little remains of the excellent stands of timber (4).

Extensive mineral deposits, particularly oil, gas, and coal have influenced the region greatly. Coal mining was active during the early part of the century in the Cadomin and Luscar areas. Production continued at a high level, tapering off in the 1950's. There are still vast deposits of coal in the region, and a renewed interest in the coal mining is being shown at the present time. Oil was discovered in the area in the late 1950's, and a number of processing plants were established. The value of the oil and the gas industry far exceeds that of any other segment of the economy.

One of the major developments of the 1950's was the construction of a pulp and paper mill at Hinton. Not only does this industry provide employment for one third of the regional labour force (4), but it also utilizes timber previously unmarketable for lumber purposes. A similar mill is planned for Whitecourt in the future.

Census Division 14 had a population density of 1.72 persons per square mile in 1966, one of the less densely populated areas of the Province. From 1961 to 1966 the population increased by 5.5 percent in comparison to a 9.8 percent increase in the Province.¹ The region, like

¹Refer to Appendix I, Table 3.

the Province and the Nation, was experiencing a trend of urbanization. The rural and urban populations were concentrated in Improvement Districts 78, 95, and 109, the areas incorporating the major urban centers and the most agricultural land. Improvement Districts 79 and 96 had the smallest populations committed almost completely to recreation, mineral, and forest industries.¹

ARDA

The Agricultural and Rural Development Act was a Federal-Provincial program aimed at alleviating the national problem of low income in Canadian rural areas. It was to establish projects of alternate land use, soil and water conservation, rural development, and research (11). The provinces were to initiate and implement the projects and programs and share approximately half of the cost involved. In addition to sharing the costs the Federal Government was to establish the main objectives of the programs and set the operational standards and policies.

ARDA was established in November 1964 as a renewal of the Agricultural Rehabilitation and Development Act of 1961. After extensive discussion between the Federal and Provincial Governments, the general terms for the new agreement (for the period 1965-70) were drafted.

As an addition to the 1964 agreement it was suggested that a five-man committee be established on the request of the provinces to review provincial plans at least once a year. Three members of this committee were to be chosen from the provinces and two from the Federal Government. The committee was to reduce the unnecessary and onerous delays in the project approval or rejection process.

¹Refer to Appendix II, Table 18.

In 1964 an ARDA office was opened at Edson for Census Division 14. Many projects were instituted by this office. Of greatest importance up to the end of 1967, were the Lions Tourists' Campsite; the Home Visitors' Program; the Farm or Woodlot Enlargement, Consolidation, and Mobility Project; and the Rehabilitation Program. The importance of the projects is defined by the extent of capital investment and length of operation. The Lions Tourists' Campsite at Edson was an attempt to encourage tourists to stay in the Edson area and use the recreational attractions in the area. The Home Visitors' Program trained workers to call on and assist about 600 families in the area experiencing family discord or financial problems. The Farm or Woodlot Enlargement, Consolidation, and Mobility Project was to buy unviable farmland units and reforest them for consolidation purposes. The Rehabilitation Program undertook to improve the educational facilities and provide opportunities for upgrading and re-training school drop-outs and unskilled people in the region.

The potential of industrial and agricultural production in Census Division 14 can be seen as being of significant economic importance to the Province as well as the Nation. It is important then, that socioeconomic development projects be initiated so that the potential of the region can be realized.

CHAPTER III

ESSENTIALS OF EVALUATION

Introduction

The essentials of evaluation are presented in a theoretical form with a review of pertinent literature. The establishment of a theoretical framework provides standards not only for the following evaluations but also for future evaluations. Only areas of the theoretical review relevant to the project to be evaluated are selected for practical application.

Describing a Development Project

Before the results of a project are discussed, the reasons why the project was undertaken should be outlined. A detailed statement of project objectives and operation may indicate the data to be used in attaining the project results. A program description can be divided into its components: a statement of the objectives, the environment within which the development project takes place, the time period within which specified results are obtained, and the staff involved in the program execution. The standards for judging development projects are based on these components.

Statement of the Objectives

A concrete definition of a program's objectives is useful in leading the evaluator to data that indicate the extent of accomplishments.¹

¹In support of this view a paragraph from H. Hyman. Applications of Methods of Evaluation. (58, p.8), is worth quoting:

In order to evaluate the effectiveness of encampment, it is a pre-requisite that such objectives be subject to measurement. But to subject to measurement we must first be able to translate these profoundly important but nevertheless broad and abstract statements into a series of simple concepts. What is subsumed under "responsible citizenship"? under "technique of democratic action" and freedom with responsibility? These series of simple concepts will then be employed to measure the original objectives.

Usually objectives with quantitative results facilitate the evaluation. Objectively measurable achievements should be described by methods that other researchers can duplicate. In evaluating projects without quantitative objectives, setting normative targets may be a useful device. Neilson (78, pp. 1302-06) in his evaluation of extension methods in farm and home development said:

We can't evaluate anything about farm and home development until we know what we are trying to accomplish. In order to do a serious piece of evaluation, we must decide what kinds of changes in farm people or in their farms or homes will be acceptable as criteria of success of the endeavor.

Areas in which the desired changes can be anticipated are standard of living, volume and efficiency of production, net income, economic opportunity, investment in social overhead capital, competence in public administration, level of education, attitudes and skills, community social structure and psychological states (that is, decision-making abilities, goals, inter-personal communications and family values). The success of a program depends upon the degree to which targets are achieved, whether their side effects are desirable, and upon the degree of difference between the real and anticipated time and cost.

On the macro level, development programs are evaluated on the basis of pre-established objectives and anticipated results. It frequently happens that projects produce desirable or undesirable side effects. These effects can be anticipated by consulting with individuals familiar with the projects and its subjects, and with experts in the social sciences. Examination of recorded data of the situations existing before the programs began can also provide clues to side effects.

Only effects of immediate importance to the project should be considered in the evaluation process. Fanshel (37) and Opler (70) in

their studies emphasized that a program is a success if it achieves unintended but crucial target groups, even if it fails to achieve the intended target groups.

Environment of Project

The environment in which a project takes place has a great influence upon the project results. An inter-relationship between the program effectiveness and environment can be established. People affected by a development project are not only exposed to new treatment from the development project in operation but will be subjected to a new environment. For example, in a student exchange program between two nations, the students from one country are not only educated in another country but also live in a different environment. The environmental factors certainly enter as a major determinant of the project's effectiveness. Definitions of these factors in the early stages of the project may be helpful both in planning and in selecting the kind of data to be used as indicators of the project results.¹

The Time Span

The description of a development project should include the time span within which desired results are sought. This inclusion is important both in planning and evaluating the results. If review of the objectives indicates that the anticipated goals are unlikely to be attained within the specified time period, the program should be reconsidered and revised. Moreover, the time factor usually plays an important role in determining the efficiency of the staff involved in the planning and execution of projects.

¹For further study see Hyman (58), pp. 182-83.

Staff Involved

Persons involved in program execution are responsible for the total output of the program in operation. In fact, an efficient staff may improve a formal program while an inefficient staff will jeopardize a good one. Observations indicate that personnel carrying out the same formal program vary greatly in their manner and the quality of their performance.¹ The efficiency of a staff is judged by analyzing the cost-return data, the time period within which desired changes are obtained, and target achievements.

In evaluating performance, detailed information about the staff should be included. The involved organizations, the professional staff, and the government agencies should all be named, and the individuals trained for jobs in particular areas should be specified.

Performance

Once a development project is launched, it is desirable to collect the data about the changes in the relevant variables exposed to the project. Results indicating the performance of a project in operation can be classified into personal, impersonal, administrative, socioeconomic, and infra-structure investment categories. Personal results involve persons experiencing changes in knowledge, in psychological state, and in social structure and values. Impersonal results are those which do not involve persons--drafted legislation or completion of pertinent surveys. Administrative results are measures of increased

¹Lippert (72), p. 173, in his evaluation of a training program illustrates just such variation in the three trained group leaders performing parallel tasks in a training program.

competence in public administration through establishment, enlargement, or reconstruction of a formal organization. Socioeconomic results are made possible by the competence and efforts of the population in developing higher standards of living. These results are measurements of physical production, the rate of unemployment, the growth rate of various economic sectors, and the distribution of income among people and other resources. Finally, changes in infra-structure investments such as public health and irrigation systems etc; and capital resources are also measured in obtaining results of a project performance.

Project Costs and Benefits

The cost of obtaining results determines the efficiency of a development project and in itself is one of the results of a project. A project's success with respect to its cost can be judged by these two criteria: An efficient project must cost as little as possible yet achieve its objectives within given constraints. The organizations and the people affected must acknowledge that the returns of a project are greater than its costs.

Both direct and indirect benefits must be considered in evaluation. Future benefits such as continued and steady progress in education, public health, and tourist activities should be anticipated.

Cost estimates should take into consideration the social costs, and the financial capacity of the individuals or group of individuals sponsoring the projects. Social costs arise in an opportunity cost sense where resources may be utilized in alternative programs to suit differing needs. The sacrifices that the society makes by not allocating its resources in alternative development projects are the

social costs of the project.¹ Throughout the process of cost estimation, an important consideration should be the financial capacity of those carrying the projects. Careful estimates in the early stages of a program will reduce possibility of financial difficulty during the operation. Moreover, these estimates will be useful when anticipated costs are compared with actual costs in the later stages of the program.

Analysis

The final step in the evaluation is to analyze the collected data and draw conclusions regarding the effectiveness of the program. This step may be supplemented by a subjective analysis.

Measurement of Change

The effectiveness of a program is evaluated by the changes it has produced in relevant variables after all the subjects have been exposed. Measurements of effectiveness can be of three types: gross and net changes in relevant variables, comparisons of before and after project situations, and benefit-cost analysis.

Gross and net changes--The principle objective is to find net change defined as the total change in a positive direction or total gains from a program, less total change in a negative direction or total losses from that program. The balance may be zero, positive, or negative. Thus programs with either of the two kinds of balance--that is, zero or positive--are considered effective. A zero balance indicates effectiveness in that some among a group of subjects may have gained from the program.²

¹For detailed description of social cost, see Ferguson (42), pp. 163-64, and Leftwich (71), pp. 136-37.

²Losses are considered to be autonomous and not as costs of achieving gains. Therefore, even projects with a zero net balance are considered effective.

Before and after comparisons--This second measurement disregards positive or negative directions of each change. Instead, the results are viewed in a total perspective and if any accomplishments exist the project is considered as successful.

Benefit-cost analysis--Benefit-cost analysis is designed to compare project costs and benefits to establish the economic efficiency and effectiveness of projects.¹ The ratio of benefit to cost can be calculated either on a gross or net basis, costs in this case taking into account the opportunity costs of the capital investments involved.² The gross ratio is calculated by dividing total direct benefits by the total associated and project costs. The net ratio is calculated by dividing the net benefits (total benefits minus associated costs) by project costs.³ In both cases any ratio greater than one indicates that the benefits were greater than costs. Indirect benefits and costs are usually excluded from the calculations.

¹Prest (83), p. 155, defines cost-benefit analysis as:

...a practical way of assessing the desirability of projects, where it is important to take a long view (in the sense of looking at repercussions in the future, as well as the nearer, future) and a wide view (in the sense of allowing for side-effects of many kinds on many persons, industries, regions, etc) i.e., it implies the enumeration and evaluation of all the relevant costs and benefits. This involves drawing on a variety of traditional sections of economic study - welfare economics, public finance, resource economics - and trying to weld these components into a coherent whole.

²For further study of opportunity cost calculation refer to Feldstein (40), pp. 117-39.

³Rogers (86), p. 7, defines project costs as:

...the values of goods and services (land, labour, and materials) used in establishing, maintaining, and operating the project ..., while, associated costs are the values of the goods and services, other than project costs, necessary to bring forth the direct products and services of the project and to make them available for sale or use...

No one method of measurement is sufficient for use in any project analysis. Measurement through gross and net change and before and after comparisons enable general analysis with most aspects of changes taken into consideration. Social, psychological, and other intangible changes are all included. However, these methods lack the usage of economic principles and therefore do not give clear indications of economic advancement. Benefit-cost analysis, as a economic tool, can supplement the former two methods for the most accurate analysis. The major limitation of benefit-cost analysis is that it is necessarily restricted to only those goods and services to which a monetary value can be assigned.¹ Therefore, its usage is restricted to economic projects unless supplemented by another method of analysis.

Types of Change

All programs may be separated into one of three aspects of achievement measurement. Some programs may be classified as those having an ample scope in which to achieve. There are unlimited areas for definite and observable improvement. Others are of "pathological" nature where every step is a necessary one on the road to achievement. The rest are those which continuously develop but within a ceiling restriction. Any step towards improvement makes it harder to bring about a new change.

In programs with ceiling restrictions the evaluational instruments must be very sensitive. Hovland (57) suggests one such instrument, that is, the "effectiveness index". The absolute changes, with respect to initial position of the subjects of a development project, are expressed as a

¹Refer to Sewell, et al, (90), p.15, Coase (30), pp. 1-44, and Rogers (86), pp. 9-12, for further information on limitations in usage for benefit-cost analysis in economic projects.

proportion of the maximum change that could possibly have taken place.

He explains,

...effectiveness may be interpreted as the effects "caused by" increasing the frequency of responses (or desired attributes) "among those initially" having the wrong responses (undesired attributes).

Accuracy in Analysis

To achieve accuracy in an analysis, the changes brought about by a project should be carefully selected, and all extraneous influencing factors should be eliminated from the changes. The validity of the resulting analysis can be determined by a statistical test of significance.

Selection of changes--Anticipated changes, whether realized or not, form the basis for an evaluator's work. An initial consideration in the analysis should be to select those changes of fundamental significance. The primary objectives of each project will reveal what changes should be considered.

Once these selections are made, several problems are confronted in gathering data regarding the changes. In certain cases data may be available to show changes, but it may be unavailable for the purposes of the evaluator. If a campaign is undertaken to promote the use of fertilizers, data regarding the amount of wheat marketed from year to year will not indicate the effects of the campaign. Weather and market conditions may also have affected the data. Data of fertilizer sales and utilization would be more reliable. Another problem might be the excessive expenses that must be incurred in finding effects that are difficult to measure. It would be more efficient in this case to measure other related effects.

If the effects of a program are long run and self-continuing, problems would arise in the measurement of change. The most desirable alternative

would be to examine the environment affected by the project a few years after its initiation. If the environment shows that the desirable and the expected trends exist, then the long run effects can be conditionally insured.

Programs that entail sub-operations to achieve their goals can be evaluated on the basis of the operations instead of the primary objectives. Each of the operations can be analyzed separately for performance, and changes can be sought accordingly.

Elimination of extraneous factors--If extraneous factors exist to influence the project operations and results, these causes should be eliminated during the evaluation. Information concerning existing situations at the pre-program stage, operating stage, and at the end of the program should be examined to detect any extraneous factors.

No social or economic development program can be executed in a vacuum. Any program concerned with a social change is exposed to many extraneous factors. Any attempt to isolate the subjects would be impractical and unrealistic. Two general approaches are suggested to reduce extraneous influences during the evaluation. In the direct procedure the records are examined for effects other than those anticipated by the project objectives. Once identified, the causes are eliminated so that their influence upon the project results can be reduced as much as possible. In the indirect approach the results of the extraneous factors cannot be immediately identified and so are detected by experimentation and research.

One experimental technique requires that the whole group of subjects be divided into an experimental group left exposed to the program and a control group secluded from the program. If both groups are exposed to the extraneous factors, the differentiated findings would represent the

relative effects of various types of program ingredients.¹

Many research workers today recommend this approach. (Carter (27) in his research evaluating the effects of a change--mow-curing hay in a farm management practice--described in 1951 the importance of the control group in these words, "... if ... the control group had not been available conclusions might have made our study appear hopeless." Despite the importance of the control group it should be noted that a number of problems are involved. First, in programs of social work, technical assistance, or health improvement in which the services rendered are imperative, it is ethically impossible to deny a control group of these services.² Secondly, due to heterogeneous nature of people it is difficult

¹For showing cause and effect relationship, Hayes, op. cit. p. 80, suggested the use of a "control" group; area or activity, in these words:

If both the 'control' and the development target show some change, this can hardly be attributed to operations of the development project. But if the development target shows the change and the 'control' does not (or else shows a significantly smaller change) and if the only observed difference in circumstances, likely to produce the particular change in the development project itself, a good case can be made that the latter is responsible for different development of the two groups.

His second approach is similar except that in this case he considered the "control" group as a nation or else some group or region or activity which included the development target and yet was large enough so that the development project could not have been expected to influence more than a small part of it.

²For detailed discussion, refer to Blenker (8), pp. 98-99, Herzog (55), p. 21, and Weir, et al, (104), pp. 57-112.

to obtain uniform groups.¹ Thirdly, where inter-regional control and experimental groups are involved, it is difficult to obtain acceptable subjects on the basis of comparability and parallelism. These very subjects are affected by environmental differences. Finally, where social interaction occurs, there exists the problem of isolating control groups from participation. Because of these practical difficulties it is almost impossible to establish an ideal control group. Smith² in a study on cross-cultural education in 1955 stressed the desirability of a comparable control group but took the view that an ideal control group is a rarity. Other researchers whose results also presented similar views are Saenger (87) and Meyer and Borgatta (75).

1

An evaluation of a training program in community relations in Connecticut reported by Lippert (72), pp. 173-74, in 1966 indicated that no comparable control group should be employed. Therefore, "This procedure", he said, "had to be ruled out as not feasible... because of staff limitations and because of the public relations problems of selecting and getting the cooperation of such a large group to whom we could give no significant service."

²An alternative approach recommended by Smith (92), pp. 389-91, is presented below in his words:

Lest these ideal requirements should discourage needed efforts of evaluation, however, more than a word of qualification is needed...It is by no means always essential to prove one's case. To the requirement that object proof is important - it is less appropriate to relax the evidential requirements. When evaluation is primarily for the benefit of programme's own administrators, skilled judgement may be substituted for proof at various points in the ideal pattern of evaluation with great saving in cost and feasibility. The judgement is being substituted for evidence: they indicate where cautious interpretation is likely to be in order.

Aside from the extraneous factors that enter into program operation, effects of the evaluational procedures itself enter into the final results. During evaluation, subjects are questioned before and after their exposure to a project so that changes can be measured. The pre-test may have serious effects upon the subsequent testing. Questionnaires containing project information may increase the knowledge of individuals and effect the results of second testing (35, 55, 69). Or if the quizzing involves opinions or attitudes, the subjects may be stimulated to change their views, and this effect will show as the results of the program rather than the questionnaire in the next test. Another possibility is that individuals will remember their earlier answers and respond the same in the second testing to give the appearance of consistency. A reasonable interval between two tests, introduction of new opinions and skillful interviews, and carefully prepared questionnaires are suggested to reduce effects.¹

Significance tests--A statistical test of significance can be used to test the validity of an evaluation. The test provides the level of confidence that can be held in the evaluation.² Hyman (58) in support of using such instruments said a proof of effectiveness cannot be accepted "unless it satisfies some specific level of confidence after a test of significance."

¹For further discussion refer to Crespi (33), pp. 103-10, and Terman (96), pp. 43-44.

²Suits (95), p. 124, defines tests of significance in these words:

Essentially, a significance test consists, of calculating the risk that an observed correlation might be a purely accidental result, generated by the random behaviour of uncorrelated variables. Any indication of

However, the test has been the subject of controversy among social researchers. A difficulty arises in obtaining all the data required for the stringent design of the tests. Selvin (89), Kish (66), and Suit (95) maintained that the test should not be used uncritically because it does not measure the favourable or unfavourable changes that occur. Nor does it eliminate the problem of deciding whether the changes that occurred were favourable or unfavourable. Furthermore, if correlations are obvious in the program, applications of the tests would be wasted time and effort.

Even if an evaluation has reached perfection, that is, all the requirements are fulfilled in a most desirable manner, it is very important to understand what has happened. Hyman (58) suggested five questions that should be raised at this point, "... (1) why did the effects occur? (2) how did they arise? (3) who is most susceptible? (4) who is the least? (5) what pieces of the program are crucial? ...". Answers to these questions are important to understand the theory behind the nature of changes that have occurred.

If desired changes do not occur, the operational procedures should be re-inspected. Modifications in the attitudes of the program initiators, in the approaches followed, and in the allocation of resources could remedy the problems. Once a program is found effective in solving some problems, a search for understanding the findings leads an evaluator

correlation is based on observed sample evidence, but chance variations are uncorrelated. The least of all significant tests is thus the calculation of the probability of observing the same evidence in a hypothetical case of no correlation. The lower this risk, the greater is the significance of the evidence, and it is natural to refer to the calculated risk as the significance level of the result.

to ask if the quintessence of his findings can be used in different places and environments.

Summary

The fundamental principles governing the evaluation of development have been presented. The elements of the evaluation are a program description, a statement of performance, an evaluation of incurred cost and benefits, and finally an analysis of the gathered data.

Initially a description of the nature and purpose of a program, and of the involved environment, time span, and staff are necessary. All desired effects should be objectively established and all side effects should be noted. In the second step performance data is collected by examining changes in relevant variables exposed to the project. Changes that should be considered in development projects are those involving personal and impersonal situations, administration, socioeconomic standards, and infra-structural investments. The third step involves an evaluation of a project's efficiency in relation to costs and benefits. The criteria for efficiency is first that the project involves the lowest cost in achieving its objectives within given constraints, and secondly, that responsible organizations and the affected people recognize the project results to be greater than the costs. Finally, the gathered data is analyzed to determine the effectiveness of the projects. Changes in relevant variables are measured by considering gross and net changes, by examining the total perspective of accomplishments, or by using benefit-cost analysis.

To achieve accuracy in the analysis of data, the effects of a project must be selected on the basis of their significance. The researcher must also examine the reliability of the available data, and give special

consideration to those projects which are long-range and self-continuing and to those entailing distinct suboperations.

Extraneous factors must be eliminated from the gross results. If these factors cannot be detected by directly observing the project records, a control group experiment can be established to determine the effects. However, such experimentation involves difficulties which makes utilization almost impractical. The extraneous influence of the evaluational procedure can be eliminated by carefully planning the administration of questionnaires and tests.

The resulting project evaluation, if accurately executed, will determine the effectiveness or desirability of the program. If it reveals that expected changes do not occur then the program goals or administration must be reinspected so that the problems can be remedied.

CHAPTER IV

ARDA PROJECTS IN CENSUS DIVISION 14

Introduction

The ARDA Office at Edson has undertaken a number of development programs in Census Division 14.¹ These programs include (1) Development of Arable Land for Agriculture, (2) Socioeconomic Research to facilitate Program Implementation and Evaluation, (3) Agricultural Committee Meetings, (4) Establishment of Technical Panel, (5) Regional Advisory Council, (6) Home and Farm Business Group, (7) Youth Organizations, (8) Leadership Development and Training, (9) Lions Tourists' Campsite, (10) Home Visitors' Program, (11) Farm or Woodlot Enlargement, Consolidation, and Mobility Project, and (12) Rehabilitation Program. The ensuing sections briefly review the performance of the major programs in accordance with the theoretical essentials presented in the previous chapter. Four programs - the Lions Tourists' Campsite; the Home Visitors' Program; the Farm or Woodlot Enlargement, Consolidation, and Mobility Project; and the Rehabilitation Program meet the problems of Census Division 14 more directly than the others. These programs also involve the largest capital investments and longest periods of operation. Each program was implemented during the study period, 1964-1966.

¹The Edson ARDA Office is composed of a Regional Coordinator, Assistant Regional Coordinator, Community Advisor, Youth Organizer, Home Economist, Nurse, Educationalist, and two secretaries.

Review of ARDA Projects

Development of Arable Land for Agriculture

Provision was made for financial assistance in developing 50,000 acres for potentially arable agricultural land into viable farm units. The total cost for this project was estimated to be \$756,000 or an average of \$15 per acre. The cost of the project was equally shared by the Federal and Provincial Governments under grant incentive. The project was approved for the period 1967 to 1979.

Socio-Economic Research to Facilitate Program Implementation and Evaluation

A research study under the Federal Provincial ARDA Agreement was completed in 1965 in Census Division 14. The purpose of this study was to identify the social and economic problems and delineate the potential for development in the region (62). This study was completed by the Farm Economics Branch, Alberta Department of Agriculture.

Agricultural Committee Meetings

Twelve independent agricultural committee meetings were held to discuss regional agricultural programs. They discussed the need for assistance as related to clearing and development of land and drainage and development of water resources. ARDA personnel attended these meetings.

Establishment of a Technical Panel

A Technical Panel with representatives from all of the Federal, Provincial, and Municipal Governments within Census Division 14 was formed in 1965. The purpose of this panel was to discuss a variety of problems requiring technical assistance from many of the government departments.

Establishment of a Regional Advisory Council

A regional Advisory Council was established in Census Division 14 in 1967. The purpose of this council was to sponsor an educational program, Seminar Six, in which socioeconomic problems were discussed.

Establishment of Home and Farm Business Study Group

On the request of the Rural Development Committee in 1966 in the Evansburg area a Home and Farm Business Study Group was established. The primary objective of this program was to discuss the problems involved in the production of farm products and their marketing. Twenty-two farm units participated in this group.

Establishment of Youth Organizations

Three new 4-H Clubs were formed in Edson and two in Peers with the help of the Farmers' Union of Alberta in 1965. Emphasis was placed upon the assets of youth in a community.

Leadership Development and Training

Three leadership training sessions and two one-day seminars were held in Edson in 1966 to develop action leaders for group organizations. The programs were sponsored by the Edson Recreational and Cultural Development Committee.

Lions Tourists Campsite

A park was constructed in the Edson area to encourage tourists to stay in the region for longer periods. The benefits from the park were to be both direct and indirect. The total capital cost was over \$100,000. The direct revenue anticipated was \$12,000, and the indirect revenue was expected to boost the regional economy by \$345,000. This project was organized by the Edson ARDA Office, the Town of Edson, the Lions' Club, and the Edson Chamber of Commerce.

Home Visitors' Program

This program was planned by the Edson ARDA Office in cooperation with the Department of Health and Department of Welfare. The main purpose of this program was to help families in the region experiencing financial and social problems. Activities were to have been initiated by 1967.

Farm or Woodlot Enlargement, Consolidation, and Mobility Project

Provisions were made for the purchase of up to 255 farms for consolidation and conversion to alternate uses. This program was expected to enhance the living conditions, improve the economic growth, and enlarge per capita income for the region. The estimated total cost of the project was \$2,550,000. The program was organized by the Edson ARDA Office, Department of Agriculture, and the Department of Lands and Forests.¹

Rehabilitation Program

The Rehabilitation Program for Census Division 14 was to improve the educational facilities and provide opportunities for upgrading and retraining unskilled people in the region. The program was coordinated by the Edson ARDA Office and Edson Manpower Center.² This program was initiated at the end of 1965.

Evaluation of Selected ARDA Projects

Lions Tourists' Campsite

Project description and objectives--The Lions Tourists' Campsite was the outgrowth of the socioeconomic study of Census Division 14

¹Refer to Appendix II, pp. 71-72.

²Refer to Appendix II, p. 73.

sponsored by ARDA (18). The main objective of the park was to encourage tourists to stay in Edson and district so they could benefit from the attractions in the area. The park was anticipated to directly benefit both businessmen and the rural areas by increasing income and employment. The request for the park was made in May 1966 and was approved in August 1966 when construction began. The park was coordinated by the ARDA Office at Edson. Other members of the organizing committee were the Town of Edson, the Lions' Club, and the Edson Chamber of Commerce.

Performance--The park started operation late in the summer of 1967. The last phase of the park was to be completed by that time, but it was still incomplete by the end of October 1967 (14). The total operating revenue from the park for 56 days was \$302 and cost of operation during the period was \$914 (Table 1). This operational revenue included camp-site fees from 186 campers and the sale of totem pole shares and post cards. The average number of cars camped per day was approximately three as opposed to a capacity of 25 cars per day (or 12 percent of the capacity). Of the 5,515 cars that stopped at the Information Bureau, more than 60 percent took a break of 5 to 15 minutes in the park.¹

Project costs and benefits--The capital cost of the project was anticipated to be \$96,108 (18), of which \$24,027 was to have been provided by the Lions' Club and \$72,081 provided equally by the Federal and Provincial Governments. Actual capital costs exceeded anticipated capital costs and \$10,000 was requested to meet the additional expenditures. The additional expenditures resulted from heavy rains during construction, the rise in labour costs because new agreements had been negotiated with the local workers' union, the cost of railway

¹The data obtained from the Secretary of the Information Bureau at Edson.

cars that was not included in the original estimates, and two flowing springs encountered in the fish pond which resulted in additional inputs of equipment and labour.

Although operational costs were involved in the project, they were not included in the anticipated costs. Direct benefits (total operating receipts) from the project were expected to amount to \$11,460 a year, and indirect benefits were expected to boost the economy by \$345,000 annually (18). Table 1 illustrates the actual performance in terms of cost and revenue for the period of July 20 to September 15, 1967. For the 56 days total operating expenditures were \$914, and the total revenue was \$1,220. This revenue includes donations worth \$918. The total operating receipts were only \$302.

Analysis--Table 1 indicates that operational cost exceeded operational revenue during the first operative summer (1967). If these figures are projected for 125 summer days, the operating revenue increases to \$665 and the operating costs to \$2,010. In benefit-cost comparisons the capital costs are not included because these costs are not recoverable if the park is closed.¹ However, the maintenance, replacement, and opportunity costs are considered in the ratio computation thereby increasing the projected costs to \$9,810.² The total direct and indirect benefits and benefits from multiplier effects are estimated to be \$8,027. The ratio of total benefits to project costs is therefore .8 to 1.0, indicating that if the condition of the park prevails, there will be some monetary losses involved every year.

¹Refer to Rogers (86), pp. 8-10, and Sewel, et al (90), p. 15.

²This figure is the sum of operating costs (\$2,010), maintenance and replacement costs (\$800), and opportunity cost (\$7,000).

If, however, the park succeeds in attracting a maximum number of campers for the 125 resort days, the annual operating revenue will be \$3,150.¹ The operating revenue, indirect benefits, and revenues from multiplier effects will total \$48,700 annually. The total costs will also increase but not enough to offset the greater revenue. If the western boundary of the park is brought in and the capacity is increased, the revenues would increase even more.

The park's failure in meeting anticipated revenues in the first operational year was largely due to overestimation of direct and indirect revenues in the project proposal. A comparison of projection to performance shows where overestimation occurred. The anticipated number of cars per day in the park was 65 or a total of 9,760 cars over a period of 125 days. The actual capacity of the park was for 25 cars per day, totalling 3,750 cars over the same period. An area that was to form the western boundary of the park was omitted, thereby considerably decreasing the park area and capacity. Despite this decrease in area, corresponding corrections were not made in the estimated capacity for cars in the park.

Furthermore, even though in its first year the park was in operation during the busiest part of the camping season, a projection of the 56 days results over 125 days of the camping season indicates that the projected figures were lower than anticipated. The number of cars camped was only 4.2 percent of the estimated 9,760 cars, and total

¹This figure is obtained by assuming that the park (with the present capacity of 25 cars per night) will be fully utilized during the operational period (of 125 days) and that the camping fee will remain unchanged.

operating receipts were only 5.8 percent of the estimated \$11,460.

Overestimation was also due to the exclusion of operating expenditures in the cost estimates. The expenditures for 56 days were three times greater than the operating receipts excluding total contributions (Table 1).

The indirect revenue in the short run could increase by \$37,800 a year if 3,150 cars were to camp and the occupants of each car were to spend \$12 a day. In this case investments might appear in the form of new retail stores or expansion of old stores and gas stations. For the months that the campsite is not in operation, however, the increased capacity to market goods and services to meet the tourist demand in the summer season would not be fully utilized. Therefore, the indirect revenue would be casual and seasonal. Thus increased tourist spending would not alleviate the existing winter season employment problem.

There were several major causes for the low income of that operative summer (1967). The first cause was the lack of advertizement before the park opening. No effective communication via radio, television, and the press was made to the many prospective summer campers. Also there were no directional signs to guide people to the park. For those who did enter, the unfinished condition and poor maintainance of the park must have been displeasing. If the conditions had been favourable, the visitors' first impression would have been a valuable media for communicating the existence of the park to others. However, the entrance roads were gravelled and rough, the washrooms were unfinished, and the planned miniature amusement train was not yet completed. Revenues were reduced also because the park delayed its opening and operated for only 56 of 125 resort days. Moreover, the park contained tent sites rather than

Table 1

FINANCIAL STATEMENT OF LIONS TOURISTS' CAMPSITE, EDSON,
CENSUS DIVISION 14, JULY 20 to SEPTEMBER 15, 1967.^a

Item	Revenue	Revenue
<u>Operating receipts</u>		
Season campsite fees (from 746 campers)	\$ 186.42	
Sale of totem poles	104.25	
Sale of post cards	11.00	
Total operating receipts		301.67
<u>Contributions</u>		
Starter Fund from Lions' Club	853.89	
Donations by business people	64.00	
Total contributions		917.89
Total revenue for 56 days		1,219.56

Item	Expenditures	Expenditures
<u>Operating expenditures</u>		
Caretaker	599.41	
Utilities	65.11	
Stationery and printing	104.47	
Supplies	145.33	
Total operating expenditures for 56 days		914.32

Balances	
Balance in account (Total revenue - Total operating expenditures)	\$ 305.24
Operating balance (Total operating receipts - Total operating expenditures)	-612.65

Source: Canada Department of Forestry, ARDA, "Lions' Campsite Statement" (Unpublished, Edson, Alberta: Edson ARDA Office, November 6, 1957).

trailer and camper accommodations which today are used more frequently. Finally, the location of the park itself was not conducive to tourist patronage. Though it was located midway between Jasper and Edmonton (a distance of approximately 120 miles from each), many of the travellers on Highway 16 felt that 15-20 minutes in the park served their purposes. This hypothesis is supported by the fact that only .1 percent of the highway travellers during the operational period stayed overnight in the park. Of the 5,515 cars that stopped at the park, only 3.4 percent stayed overnight.

The total number of cars benefitted by the Tourists' Information Bureau exceeded the anticipated number by 50 percent. The average number of vehicles getting information from the Bureau per day was close to 100, which was approximately 2.5 percent of the average number of vehicles per day on Highway 16 between Edmonton and Jasper National Park.¹ These travellers can be potential campers who will stay in the park overnight or longer if the park impresses them.

Social and indirect economic benefits can be anticipated with an increased number of tourists staying in the Edson area. At present, business stores in Edson accommodate only the urban and rural populations. Increased tourist spending will encourage the merchants to expand their business with more confidence. With the confidence and initiative of the local population, social organizations can be established with cooperative enthusiasm.

Such an indication was evident in the motivation of the people of

¹Information was obtained in an interview with the personnel in the Planning Branch of the Alberta Department of Highways at Edmonton, Alberta.

the region. Store managers in Edson were encouraged by the park and were confident of an increase in their income in the future as a result of the increased number of tourists. They thought that as the demand for their commodities increased, they would expand their scale of activities. These factors and multiplier effects of the increased scale of activities can speed up the economic growth of Edson and the district.

Home Visitors' Program

Program description and objectives--In 1966 an estimated 600 families in Census Division 14 were experiencing health problems due to poor sanitation and malnutrition, a need for welfare assistance, and internal family conflicts. The goal of the Home Visitors' Program was to qualify home visitors throughout the region to work with and improve the conditions of these families. This program, conceived in 1966 and initiated early in 1967, was coordinated by the Edson ARDA Office and the Alberta Department of Agriculture. Technical resources to assist in training the home visitors were provided by the Extension Division, Department of Agriculture, the local public health unit, and the Alberta Department of Welfare. The home visitors were trained in health and sanitation, money management, family relationships, and leisure time activities.

By the end of 1967, 25 home visitors in each of the five districts including Hinton, urban Edson, rural Edson, Wildwood, and Whitecourt, were to have been trained and sent into the field (15). Two hundred families were to have been reached in the first year and one hundred more were to be added in the second year (1968-69). In the final year approximately one hundred families who entered the program in 1967-68 were to have completed the program and were to be replaced by one hundred new families.

Performance--In May 1967 six home visitors were trained in Hinton. The home visitors worked with 12 families for the months of June and July, 1967. No further families in Census Division 14 had been contacted by December 1967. Reports sent to the ARDA Office at Edson by the home visitors indicated that significant improvements were observed among the families contacted. The families had started budgeting their expenditures, had adopted food storage and good shopping habits, were taking more pride in their appearance, and kept their homes looking cleaner and neater.¹

Project costs and benefits--The total cost for 1966-68 was budgeted at \$14,970 (Table 2). The expenditures were allocated to training, salaries, transportation, and miscellaneous expenditures. Total cost of the program was estimated to be \$59,970 from 1966 to 1970, financed equally by the Federal and Provincial Governments. The estimate made for the same period was \$22,500 per year. No direct benefit was anticipated from the project.

Actual expenditures to December 1967 were approximately \$1,500; \$700 was spent on training and the rest on transportation, salaries, and miscellaneous expenditure.

Analysis--The goals of the program were not achieved in the first year of its operation. The number of families visited was one sixteenth of the proposed two hundred families. The average number of families per home visitor was one fourth of the figure anticipated. This underachievement may have been caused by a number of reasons. First,

¹Canada Department of Forestry, ARDA, "Hinton, Home Visitors Progress Reports sent to the ARDA Office" (unpublished, Edson ARDA Office, 1967).

Table 2

BUDGETED AND ACTUAL EXPENDITURES FOR HOME VISITORS
FOR CENSUS DIVISION 14, 1966-70.

Year	Dollars
1966-68 Budget	\$ 14,970.00
1968-69 Budget	22,500.00
1969-70 Budget	22,500.00
Total	59,970.00
Average budgeted family cost	85.67
Actual expenditures 1967	1,500.00
Actual average family cost	125.00

Source: Canada Department of Forestry, ARDA, "Request for Assistance Under Program V, Rural Development Areas, Project #35/66" (Unpublished Request. Edson, Alberta: ARDA Office, October 1966).

the ARDA Office was unable to attract the anticipated number of home visitors due to the unattractive wages offered. Secondly, among those home visitors who were employed, there was a lack of enthusiasm. Finally, the program was introduced into one district only (though the ARDA Office had assumed that if the program was successful in one district, it would be introduced to the rest of the region).

According to the program the home visitors were supposed to work 10 hours a week, 50 weeks a year (15). In actuality the home visitors worked for the first two months and did not work for the next two to three months. This irregularity in the working habits of the home visitors was largely due to insufficient supervision by the ARDA Office. The visitors worked on voluntary hours, often letting their own family affairs intervene in the times they were to devote to the depressed families. Also the home visitors were inadequately trained to cope with many families efficiently. The fact that they were not devoting sufficient time to their work was taken as evidence of their lack of interest in their duties.

In addition to the fact that the anticipated 200 families were not helped in the first year of operation, there were many families who had been overlooked. A lack of publicity for all but Hinton residents resulted in other areas being uninformed about the project. Therefore, many families in outlying districts were unable to indicate their needs for attention.

Despite the operational problem the Home Visitors' Program itself was a useful approach to depressed families. Ad hoc interviews indicated that the families visited followed most of the instructions given by the home visitors. The ARDA Office expected long-run changes in the

unproductive lives of the families involved in the project. As their needs increased, change in the demand pattern of agricultural and industrial products was anticipated. Also higher health and educational standards were expected. Finally, as a result of the repaired community and family relations, an increase in the amount of community participation was expected.

Major changes in each family are expected to occur within the formal program period. Future improvements will occur but at a significantly lower rate and only as the effects of the major initial changes. The effectiveness index must therefore be used to accurately measure all of the changes produced.¹ The absolute changes occurring with respect to the initial position must be compared with the maximum changes that could possibly occur. At the time of this study, the program was producing only the first of observable changes. Results of absolute changes and maximum changes must be available to properly utilize the effectiveness index.

Farm or Woodlot Enlargement, Consolidation, and Mobility Project

Project description and objectives--In 1961, 255 of the 973 farms in Census Division 14 were viable units.² While the average size of the farms in 1965 was 447 acres, only a third of this land was improved. Over half of the farmers had holdings of less than one section (19). The Farm or Woodlot Enlargement, Consolidation, and Mobility Project was conceived in 1966 and approved in January 1968. However, the purchase of farms

¹For further study refer to p. 16 of this thesis.

²Canada Department of Forestry, ARDA (19), pp. 1-3. A viable unit of land is defined as the one which provides a farmer enough returns that he can enjoy average standard of living.

was initiated late in 1966 under the Land Assembly Program. The primary objective of this project was to coordinate the purchasing and selling of land to encourage the formation of economic farm units.¹ A secondary objective of the project was to purchase farmland of low agricultural productivity and put it to more effective use.² Seventy farms at the given average cost per farm were to be purchased during 1966-67, 95 farms during 1968-70, and 90 farms during 1971. The plan included purchase by ARDA of both economic and uneconomic farm units at the Conservation and Utilization Committee's appraised value. The land appraisals were based on market value and the asking price. The appraisals were accepted after approval by the ARDA administration and the ARDA administration and the Director of Lands Branch of the Department of Lands and Forests.

The ARDA Office at Edson was the main coordinator of this project. Other participant organizing agencies were the Department of Agriculture and the Department of Lands and Forests.

Performance--By the end of October 1967, 47 farms were registered for appraisal (2). Of these 47 farms, 28 were accepted for purchase, 10 were rejected, and the rest were pending.³ The persons selling their

¹The definition of the Section 17 of the Part II of Federal-Provincial Rural Development Agreement, 1965-70, ARDA (12), p. 13, is as follows, "... the acquisition of non-economic farms for the purpose of effecting farm enlargement or consolidation, or for conversion to a more effective use ..."

²The secondary objective of the program is defined in Section 17 (1) of the Part II of Federal-Provincial Rural Development Agreement, 1965-70, ARDA (12), p. 13, in these words, "... the acquisition of farmland of capability for agricultural use for conversion to a more effective use such as permanent forage or pasture, forest, recreation, wild life, manage or conservation reserve ..."

³Applications were rejected if farmers would not accept the land appraisals. If farmers were still considering their decisions, their applications were left pending.

farms were grouped as those finding alternative labour, those retiring early, those being trained, and those relocating themselves in agriculture.

Though 40 percent of the first phase objectives were achieved to the end of November 1967, there was still no indication that the second phase had been initiated. None of the farms purchased in the Brown Zone had been resold for consolidation and enlargement. Nor was there any indication that farms purchased in the Green Zone were being converted to wood and wood production.

Project costs and benefits--Provision was made for the purchase of up to 255 farms for alternate land use and/or farm consolidation. The estimated average cost under the farm purchase program was \$10,000, and the estimated cost of the program was \$2,550,000 to be shared equally by the Federal and Provincial Governments (19). The total cost of the farms accepted to the end of 1967 amounted to \$273,283. The farms purchased involved an area of 7,469 acres. Some of these farms were valued as high as \$30,000. Net revenue from leases and rentals and gross receipts from the sale of land were also planned to be shared equally between the Federal and Provincial Governments. It was anticipated that the \$2,550,000 spent on this project would be recoverable if losses due to lower resale values did not occur. The returns from the sale of lands were to be divided between Canada and the Province in proportion to their respective investments.

Analysis--By the end of 1967 performance indicated that the project had attained only 40 percent of its target (70 farms). Of the 47 farms registered, 60 percent were purchased, 21 percent were rejected, and only 19 percent were still pending as a result of the time-consuming registration and acceptance procedures. The farmers who sold their farms were

satisfied with their contracts. More than 86 percent of these farmers found alternative jobs without the help of the ARDA Office at Edson. Six percent of them were helped in finding jobs, and 8 percent were sent for academic upgrading and retraining by the ARDA Office.¹ The actual average cost of 28 farms was \$9,760 per farm compared to \$10,000 per farm estimated.

The target was not achieved mainly because farmers were not satisfied with the land appraisals offered them. Also a number of farmers hesitated to sell their farms because of the paucity of jobs and retraining opportunities and because of relocation problems. Moreover, there was a lack of advertisement that also cut down the number of applicants approaching the ARDA Office. Many prospective sellers did not have enough information about the project to forward their applications.

Unnecessary delay from the time the farmers were initially counselled to the time of the actual transaction occurred frequently because of the lengthy purchasing procedures established by the ARDA Office.² Farmers intending to sell their farms were not encouraged to do so. They were forced to prove their willingness to sell by submitting to several formalities: a lengthy process involving interviews, recommendations, and appraisals. The delays sometimes amounted to several months before farms were purchased. Meanwhile no progress was being made in consolidating the land or in turning the purchased Green Zone farms to production of wood.

¹Canada Department of Forestry, ARDA, "Unpublished data on Farm or Woodlot Enlargement Consolidation and Mobility Project Progress" (Edson: ARDA Office, 1967).

²Canada Department of Forestry, ARDA, "Unpublished Data on Farm or Woodlot Enlargement, Consolidation and Mobility Project Progress" (Edson: ARDA Office, 1967).

As a consequence of the program at least 28 farmers will be relocated in jobs that afford them an acceptable living. As well, their land will be resold for consolidation, and the farmers buying the land will benefit from economies of size in the use of time and equipment.¹ These factors will thus enhance the economic level of living of the people of the region and enlarge their per capita income. Thus the program can be justified by the economic impact upon the people of Census Division 14.²

Rehabilitation Program

Program description and objectives--It is recognized that education is a vital investment and a major determinant of the economy. The primary goal of the Rehabilitation Program for Census Division 14 was to improve educational facilities and provide the opportunities for upgrading and retraining school drop-outs and unskilled people in the region so that they could be re-established in effective employment. The Program was conceived in August 1965 and approved and initiated at the end of December 1965. In January 1968 a comprehensive plan under the name 'Rehabilitation of Residents of Census Division 14' was signed both by the Federal Government and Provincial Government. The program was coordinated by the Edson ARDA Office in cooperation with the Canada Manpower Center. Technical assistance was provided by the University of Alberta, Department of Psychology. The Federal and Provincial Governments financed the program.

Performance--By the end of 1967 five persons had been sent for

¹ This premise assumes that the resources were under utilized.

² For further description refer to Rural Development Program C.D. 14 (19).

agricultural training¹ and six for academic upgrading and vocational and technical training.² One person had completed his training by October 1967.

Project costs and benefits--The program provided for aptitude testing by the University of Alberta; upgrading and vocational training by the Alberta Department of Education, Resource Training Corps: mobility allowance up to \$1,000 per family for those affected by the land use and farm adjustment program; a moving allowance of \$60,000 for about 100 families. Total cost for the eleven persons enrolled, to the end of 1967 amounted to \$32,424.³ Sixty-five percent of the total expenditure was spent on farm purchase and moving allowances, the rest was spent on training and upgrading the trainees.⁴ The Federal Government bore 15 percent of the cost; the rest was paid by the Provincial Government.

No direct revenue was anticipated from the project. Long run indirect revenue was expected to accrue to the individuals and society because trainees would be able to earn more as a result of new training and skill.

¹These five persons were sent to Agricultural College at Olds and Agricultural College at Vermillion for Vocational Agricultural Training under Program III of Federal-Provincial Agreement 1965-70, (12), p. 15.

²These six persons were sent under Program IV of Federal-Provincial Agreement 1965-70, (12), p. 16 to Northern Alberta Institute of Technology (NAIT) for Alberta Vocational Training.

³Canada Department of Forestry, ARDA, "Unpublished Data on Rehabilitation Program Progress" (Edson: ARDA Office, 1967-68).

⁴Canada Department of Forestry, ARDA, "Unpublished Data on Rehabilitation Program Progress" (Edson: ARDA Office, 1967-68).

Analysis--After World War II the Canadian wage structure experienced a considerable narrowing of wage differentials between skilled and unskilled workers.¹ During the 1950's the rate of narrowing decreased in some industries, stopped in others, and even reversed in some. This recent trend was attributed to the increased number of skilled workers, inflation, full employment, the government wage policy, and union pressure. During the war rapid technological advancement resulted in increased demand for skilled labourers. The wage structure indicated that the demand pattern was geared to favour the skilled and professional people and that the unskilled people were confronted with low wages or unemployment.

One of the most crucial needs of Census Division 14 was to produce enough skilled people to meet the existent and the prospective demands of the local industries. Increased industrial activity was imperative before the region could hope for higher standards of living. ARDA undertook to provide this need. However, observations indicated that the program strategy was prepared without the aid of a detailed manpower survey. The number of persons needing training and the extent of shortage of trained persons was not known.

There were additional problems facing the ARDA Office regarding this program. First, there was a difference in emphasis between the Canada Manpower Center in Edson and the Edson ARDA Office. ARDA felt that academic upgrading was essential before vocational or skill training could be undertaken, while Manpower emphasized the initial importance of job training. This disagreement brought about a certain degree of

¹For detailed study refer to Chernick (28), pp. 5-33, and Canada Department of Labour (21), pp. 17-68.

confrontation during counselling. Elapsed time between counselling and training also affected prospective trainees' decisions. Sometimes decisions took six to nine months because recommendations were sent back and forth. In at least two cases the time lapse caused persons to look for alternative jobs.¹ Also inadequate publicity again prevented many people from knowing about the program. Therefore, those who might have been interested in becoming involved in the program could not submit their applications.

Moreover, administratively the personnel of the ARDA Office were not encouraging. After their first meeting with ARDA many people may have lacked the courage to go back and face the antagonistic approach exhibited.²

Despite these problems the program was effective in training the eleven persons. Assuming that all these persons would be employed in their relative fields in the labour market, they would earn 66 percent more than they could earn as unskilled labourers.³ The annual social direct benefits of these trainees in 10 years

¹Data collected through interviews with the people in Census Division 14, 1967.

²Ibid.

³Calculations are done on the basis of wage rate figures obtained from the Department of Manpower at Edmonton.

would amount to \$427,752.^{1,2} The capital invested in the project and valued in 1969 is \$37,840.³ The benefit-cost ratio in 1969 is the ratio of direct monetary benefits for 10 years discounted to 1969, to the total capital inputs between 1966 and 1969. This ratio is 11.3 to 1.0. Therefore, the project seems clearly justified on this basis.

¹The benefits accruing from the training scheme net of annual earnings which would have been received without training are calculated by using the formula:

$$B = \frac{P-A}{1+r} + \frac{P(1+i)-A}{(1+r)^2} + \frac{P(1+i)^2-A}{(1+r)^3} + \dots + \frac{P(1+i)^{t-1}-A}{(1+r)^t}$$

where

B = Total direct benefits discounted for t years.

P = Total annual income after training.

A = Total annual income without training.

r = Annual discount rate.

i = Rate of annual increament in salaries of skilled persons.

t = Period of time involved commencing on January 1, 1969 when trainees begin employment.

The value of P is \$55,000, A is \$36,300, r is 7 percent, i is between 6-8 percent, and t is 10 years.

²The project is considered in an ex ante framework because similar projects are being considered for future trainees.

³Annual cost of each subsequent year of the three-year program (1966-68) is compounded to the 1969 base year according to the following formula:

$$C = C_1(1+r)^3 + C_2(1+r)^2 + C_3(1+r)$$

where

C = Capital valued in January 1, 1969.

C₁ = Training expenditures in 1966.

C₂¹ = Training expenditures in 1967.

C₃² = Training expenditures in 1968.

r³ = Annual discount rate.

The value of each of C₁, C₂, and C₃ is \$11,000 and r is 7 percent.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Both specific and general conclusions are drawn from the preceding analysis. Specific conclusions are made of each of the major projects and general conclusions are made concerning the administrative structure of ARDA itself. Recommendations are also presented in an attempt to remedy some of the problems encountered by the ARDA administration.

Project Conclusions

Lions Tourists Campsite

An analysis of the park's performance in the first operational summer indicated that the project was not economically feasible. The operational expenditures will continue to exceed the direct revenues from the park if tourist patronage does not increase. As it stands, the park is not conducive to the patronage of highway (Nos. 16 and 14) travellers. The park is located midway between Jasper and Edmonton; therefore, it is doubtful that tourists will camp overnight when Jasper and Edmonton are only a 2 1/2 hour drive away. Moreover, the unfinished conditions of the park are not impressive enough to attract more tourists.

Program planning represented the second major group of complications for the park construction and operation. Operation, repair, and maintenance costs were not included in the project proposal, and the gross revenue was overestimated. Because the planners underestimated the time required to complete the park, on the opening day only 25 of the 65 planned campsites were completed. Furthermore, to that date, \$10,000 more than the original appropriation had been spent. Despite the primary goal of the park to increase tourist expenditure in the Edson area, no provision

was made to measure the amount of spending.

Home Visitors' Program

This program suffered serious under-achievement. Only one quarter of the anticipated number of home visitors were employed, and only 12 of the anticipated families were helped. The ARDA Office did not employ the required numbers of home visitors; they failed to adequately train the visitors in efficiently handling a number of families at one time. Moreover, they failed to publicize the program so that all needy families could be contacted. One cannot consider improving the socio-economic conditions in a region if the relevant portion of the populous is not affected.

Farm or Woodlot Enlargement, Consolidation, and Mobility Project

In its first year the program fell 60 percent short of the anticipated goals. The operational problems confronted were caused partially by the program plan, and partially by the administration. The plan did not provide for relocation and employment information or facilities. Also, few farmers knew enough about the program to submit their applications. An administrative weakness was evidenced in the delays encountered in counselling farmers from the time of their application to the time of purchase. Furthermore, the second and most significant phase of the program was not begun as anticipated. No contracts were made to convert the purchased land into forest production or to resell the land for consolidation.

Rehabilitation Program

Though it is true that only 11 persons were trained or are being trained, these people will afford future benefits to the region. Significant changes in the trainees' incomes can be anticipated in the future.

Difficulties arose in the planning and implementation stages that hampered program efficiency. Initially a disagreement arose between the Edson ARDA Office and the Manpower Center in Edson concerning the primary importance of academic upgrading or skill training. Moreover, before the program was initiated, insufficient data was gathered about the number of persons needing training about the demand for trained persons in the region. Once in operation, several other problems blocked efficiency. Limited publicity restricted the number of applicants requesting training. Lengthy waits before decisions were made about trainees not only decreased efficiency but posed problems for the subjects involved. Finally, the approach used by the ARDA staff was unattractive to prospective trainees.

Each of the four major projects advanced by ARDA has been evaluated in terms of economic success. Regional development projects such as these initiated by ARDA have policy frameworks and objectives which provide guidelines for their implementation. Strict adherence to detail is impossible when the subjects of a program are involved in social interaction. Changes in minor objectives and policies will usually be necessary to adapt projects to unpredictable influencing factors that arise. However, major objectives of any program should be realistic enough to be attainable. In the case of these ARDA projects each one failed to reach its objectives in the time specified.

For the projects to be implemented successfully, it is necessary that initial planning be realistic, accurate, and economically efficient. In the Lions Tourists' Campsite Project and the Farm or Woodlot Enlargement, Consolidation, and Mobility Project, it was evident that the performances did not meet the expectations. The goals were not reached

primarily as a result of an overestimation of available resources. Inadequate surveying prior to the program's initiation caused problems in capital investments, time factors, and locational facilities.

Once the programs had begun, management problems within the ARDA Office created further problems. Initially, the ARDA staff caused unnecessary delays in initiating activity. Among the personnel there was an overall inability to initiate quick and effective action. This inefficiency may have been due to poor supervision or inadequate program planning. Furthermore, performance in the Rehabilitation Program indicated that in handling the subjects an antagonistic approach was used. A major cause of underachievement in all four programs was the insufficient publicity advanced by the management. The cooperation of subjects directly affected by the programs could not be expected if they were not given adequate information regarding the projects to be initiated. It is imperative that the management of operations be organized to achieve cooperative efforts, otherwise the effectiveness of even a good program be jeopardized.

Another major problem confronting the Edson ARDA Office was a shortage of capable personnel with power and support in the Provincial ARDA Office. Each of the programs evaluated could have been operated with greater efficiency if the staff involved did not have so many responsibilities. Moreover, delays often were due to the inability of this staff in getting support and approval from the main office in Edmonton. The main office should have foreseen and provided for adequate staff members and cooperated with them in initiating and implementing their programs.

A total perspective provided by the foregoing evaluations has revealed that a serious problem exists within the structural framework of the various operations. This structural problem encircles the government agencies related to ARDA and ARDA itself and is extremely difficult to document. Interviews with the pertinent staff members indicated that hostility often existed between ARDA and its corollary agencies. Because the ARDA Office was advancing projects which concerned at least one other government agency in the area, it was hoped that the two would cooperate in realizing their common goals. Contrary to this anticipation, agencies often disliked the interference of ARDA and often did not change their policies to meet the coordinating efforts of ARDA. If this structural problem is not overcome, ARDA as an effective institution will lose considerably more influence.¹

Recommendations

Lions Tourists Campsite

Tourist patronage for the park cannot increase unless the Town of Edson and the Lions Club at Edson incurs additional expenditures to increase the attractiveness of the park. Facilities for trailer campers should be added to the present tent sites and the miniature railway should be completed. The merchants of Edson should be encouraged to adopt late-night shopping to further attract tourists. Once these improvements are made, there may be an increase in camping fees.

There is an initial need however, for the present facilities in the park to be improved. Roads must be graded and gravelled, provisions

¹ Refer to Appendix II

must be made for efficient garbage and rubbish disposal, and washrooms must be cleaned and finished. These facilities should be provided by any park for the convenience of its campers.

Tourist patronage will definitely increase with increased advertisement. More tourists must be made aware of the park via the news media and highway advertising. Eventually, if the park pleases the tourists its existence will be related from person to person.

If future park patronage increases considerably, it would be advisable to expand the park to the planned western limits to accomodate the extra campers or encourage a private adjoining park. However, until patronage is assured, expansion would not be feasible.

Home Visitors' Program

First, ARDA should make another intensive survey of the number of people needing help. The program plan should be widely advertized in the region in an effort to reach those families who were previously overlooked.

Secondly, so that all of the families can be accommodated, the number of home visitors must be increased. An increased number of volunteers may be induced through meetings, interviews, and demonstrations to offer their services at minimum pay. Only those workers who can give full support and time to the planned duties should be chosen. If enough volunteers cannot be attracted, provisions must be made to engage a formal staff with appropriate wages. Those employed must be carefully trained to make efficient use of their time and must be carefully supervised in their working hours.

Farm or Woodlot Enlargement, Consolidation, and Mobility Project

The main problem confronted by the ARDA Office in this program was

convincing farmers to sell their non-viable farms. It is important that the plan be advertized widely so that all of these farmers are made aware that ARDA has provided an opportunity to sell. The offers made for land purchase should be reasonably attractive so that the farmers do not have the fear of losing money. Many farmers were reluctant to sell because of relocational or employment problems. ARDA should continue and step up vocational counselling with the aid of Canada Manpower Center which should continue to take the responsibility of informing applicants of training and job opportunities. Relocational information of transport agencies and property buying or selling should also be provided.

Administrational and pre-purchase counselling delays were also noted during the operation of the program. It is necessary to examine the causes for the delays and correct them. The personnel must make quick and effective decisions in dealing with the farmers who approach them.

Rehabilitation Program

This program can be implemented more successfully by improving a number of conditions. First, it is essential that harmony be established between the Canada Manpower Center in Edson and the Edson ARDA Office in dealing with the basic issues of the program. Controversial issues should be thoroughly reviewed and a consensus arrived at in meetings between the institutions. Ongoing enumeration of the people who need training and of people trained should be instituted. This will enable the ARDA Office to make provisions so that all these persons can have training. Publicity must be increased to attract as many people as possible who need training.

The effectiveness of the program can be enhanced even more if the trainees are encouraged by their interviews with the ARDA Office. The

trainees should have confidence that their views will be considered in subsequent decision-making. The lengthy gaps between counselling and training can be reduced by quick decision-making without unnecessary delays.

Census Division 14, being a region of low socioeconomic standards, is in great need of a development program such as ARDA. Furthermore, the programs initiated by the Edson ARDA Office have the potential for effective contributions to the region. Considerable inputs of financial assistance have been provided by the Federal and Provincial Governments to enable the initiation of these development projects. Despite these facts, the Edson ARDA Office has not been able to implement and initiate projects at the scale required to make an impact in the identified problems in Census Division 14. The success of the recommendations made are dependent upon the provision first, of adequate personnel and effective cooperation of the provincial government agencies in the region.

APPENDIX I

AGRICULTURAL GROWTH IN CENSUS DIVISION 14

Because most of the projects undertaken by the Edson ARDA Office concern the agricultural sector of the economy in Census Division 14, it is important to be familiar with the agricultural situation in that region. An evaluation of the projects is not complete without first establishing the initial position and the trends of the agricultural industry before ARDA began its activities.

Description

Rural population

Agriculture, in which twenty-five percent of the wealth-producing labour force in Census Division 14 was engaged, accounts for four percent of the gross regional product in 1966 (19). The rural farm population of the region increased from 21.9 percent of the total population to 23.6 percent, representing a gain of 584 persons. On the other hand, the rural farm population of the Province had decreased from 21.7 percent of the total population to 19 percent. The rural nonfarm population of the region decreased both numerically (by 28.9 percent) and as a proportion of the total population (from 37.7 percent in 1961 to 25.4 percent in 1966) during the same period. The comparable figures for the Province were 18.6 percent, and 14.4 percent to 12.7 percent, respectively. The above changes are presented in Table 3.

Total area of agricultural land

The amount of improved land in Census Division 14¹ constituted 37

¹The area of improved land consisted of the total of the areas reported for the four land categories, namely, area under crops, improved pasture, summerfallow, and improved land.

Table 3

POPULATION BY RURAL FARM, RURAL NONFARM, AND URBAN
CENSUS DIVISION 14 AND ALBERTA, 1961 AND 1966.

	Year	Rural		Urban	Total
		Farm	Nonfarm		
C. D. 14	1961	4,223	7,287	7,781	19,281
	1966	4,867	5,117	10,374	20,298
Alberta	1961	289,081	191,287	851,576	1,331,944
	1966	277,598	178,198	1,007,407	1,463,203

Source: Canada Dominion Bureau of Statistics. Census of Canada, Agriculture, 1961 and 1966 (Ottawa: Dominion Bureau of Statistics, 1961 and 1966).

percent of the total area of census farms in 1961 and 41 percent in 1966. Over 68 percent of the improved land was under crops in 1961 and 76 percent in 1966. This higher percentage of improved land is attributable to a number of causes. Economies of scale had made necessary an enlargement of holdings and consequent clearing of land. Also there was an increase in the number of farms and established homesteaders (Table 4).

Size of farms

The classification of farms by size indicated that from 1961 to 1966 the percentage of farmers with small holdings of less than 70 acres decreased considerably, and correspondingly there was an increase in the percentage of farmers with larger holdings. The economical aspects of large-scale production may have induced this trend of farm enlargement during the period of 1961-66. Table 5 illustrates the changes in number of farms in different size classes.

Number and average size of farms

From 1961 to 1966 the number of farms in Census Division 14 increased by 4.9 percent, while the Provincial trends showed a decrease of 2.5 percent. During the same period the average size of farms in the region increased by only 6 percent as compared to the Provincial average of 20.7 percent. The difference in the average size of regional and provincial farms had been reduced by 12.4 percent in the six years. These comparisons are shown in Table 6.

Land use

Cropping practices in Census Division 14 were significantly different from rest of the Province. Tame hay occupied 35.3 percent of improved land under crops in 1966. In the Province, on the other hand, wheat occupied over one third of the improved land under crop. In the extreme

Table 4

FARMLAND IN CENSUS DIVISION 14, 1961 AND 1966

Use of Land	1961	1966	Percent Change 1961-1966
Improved Land Area	132,916	181,653	36.6
Under Crops	90,447	118,726	32.2
Improved Pasture Area	16,826	32,835	95.1
Summerfallow Area	18,569	20,251	90.0
Other Improved Land	7,074	9,841	39.1
Unimproved Land Area	227,059	265,212	16.8
Wood Land Area	66,673	57,241	14.1
Other Improved Land	66,615	207,971	212.2
Total Area	359,975	446,865	24.1

Source: Canada Dominion Bureau of Statistics. Census of Canada, Agriculture, 1961 and 1966 (Ottawa: Dominion Bureau of Statistics, 1961 and 1966).

Table 5

CENSUS FARMS CLASSIFIED BY SIZE, CENSUS DIVISION 14,
1961 AND 1966.

	Number		Percent	
	1961	1966	of C.D. 14 Farms 1961	1966
Under 70 acres	17	14	1.7	1.4
70 - 239 acres	337	265	34.6	25.9
240 - 399 acres	331	305	34.1	29.5
400 - 559 acres	145	214	14.9	20.9
560 - 759 acres	75	117	7.7	11.5
760 - 1,111 acres	49	69	5.1	6.8
1,120 - 1,599 acres	13	25	1.3	2.8
1,608 - 2,239 acres	2	6	.2	.6
2,240 acres and over	4	6	.4	.6
Total	973	1,021	100	100

Source: Canada Dominion Bureau of Statistics. Census of Canada, Agriculture, 1961 and 1966 (Ottawa: Dominion Bureau of Statistics, 1961 and 1966).

Table 6

NUMBER AND SIZE OF FARMS IN CENSUS DIVISION 14 AND
ALBERTA IN 1961 AND 1966.

	Census Division 14			Alberta	
	1961	1966	Percent Change	1961	1966 Percent Change
Number of Census Farms	973	1,021	4.5	72,212	49,411 -2.5
Average Size of Census Farms (acres)	362	437	20.7	645	685 6.0

Source: Canada Dominion Bureau of Statistics. Census of Canada, Agriculture, 1961
and 1966. (Ottawa: Dominion Bureau of Statistics, 1961 and 1966).

climatic conditions of the region, tame hay thrived profitably and was used to feed the increased number of livestock. The percentage of improved land allocated for the production of major crops is presented in table 7.

Number of livestock and poultry

During 1961 and 1966 the number of livestock and poultry increased by 20 percent in Census Division 14. The number of beef cattle experienced a major gain of 78 percent and the number of cattle per farm increased by 63 percent. There was also an increase in the number of farms producing them. The total number of sheep and poultry had actually decreased. These changes are shown in Table 8.

Value of farms

The value of farms in Census Division 14 rose more rapidly than the rest of the Province from 1961 to 1964. From 1964 to 1966 the rate of rising values was significantly slower (Table 9 indicates that there was a general increase in the average values of farms throughout the Province during 1964-66 and the rate of change in Census Division 14 was 47 percent lower than the Province during this period). The rise in values in Census Division 14 can be attributed to the rise in the land values, increased land improvements, and greater investments in machinery and equipment per farm.

Average investment figures shown in Table 10 indicate that investments per farm in lands and buildings and machinery and equipment increased greatly during 1961 and 1966. The investment in livestock and poultry increased the least.

Value of agricultural products sold

Though the number of the farmers in Census Division 14 had increased

Table 7

PERCENTAGE OF IMPROVED LAND UNDER CROPS IN CENSUS DIVISION 14
AND ALBERTA, 1961 AND 1966.

Kind of Crop	Census Division 14		Alberta	
	1966	1961	1966	1961
Wheat	14.9	12.1	36.7	36.4
Oats	17.4	24.3	11.8	17.1
Barley	14.1	16.0	21.9	18.6
Mixed Grains	1.4	2.0	2.3	2.4
Tame Hay	48.6	35.3	16.6	16.0
Potato	.2	.8	.4	.1
Other Crops	3.4	9.5	10.3	9.4
Total	100.0	100.0	100.0	100.0

Source: Canada Dominion Bureau of Statistics. Census of
Canada, Agriculture, 1961 and 1966 (Ottawa: Dominion
Bureau of Statistics, 1961 and 1966).

Table 8

NUMBERS OF LIVESTOCK AND POULTRY IN CENSUS DIVISION 14,
1961 AND 1966

	1961	1966	Percent Change	Number Per 1961	Farm 1966
All Cattle	18,938	33,744	78.1	25	42
Milk Cows	3,473	3,576	2.9	4.6	4.5
Pigs	11,278	9,579	-15.1	21.5	20
Sheep	6,417	5,561	-13.3	52	56
Horses	1,413	1,423	-11.8	3.4	3.4
Hens and Chickens	71,430	81,176	13.6	115	151

Source: Canada Dominion Bureau of Statistics. Census of
Canada, Agriculture, 1961 and 1966 (Ottawa: Dominion
Bureau of Statistics, 1961 and 1966).

Table 9

AVERAGE VALUE OF FARMS, CENSUS DIVISION 14 AND ALBERTA,
1961, 1964, and 1966.

	1961	1964	1966	Percent Change 1961-66	Percent Change 1961-64	Percent Change 1964-66
Census Division 14	16,761	26,931	30,608	83	61	13.7
Alberta	37,118	51,287	60,734	63.6	38.2	18.4

Source: Canada Dominion Bureau of Statistics. Census of
Canada, Agriculture, 1961 and 1966 (Ottawa:
Dominion Bureau of Statistics, 1961 and 1966).

Table 10

AVERAGE INVESTMENT PER FARM IN CENSUS DIVISION 14,
1961, 1964 AND 1966.

	1961	1964	1966	Percent Change 1961-64	Percent Change 1964-66
	(in dollars)				
Land and Buildings	9,683	16,754	19,080	73	13.9
Machinery and Equipment	3,941	6,176	6,390	56.7	3.4
Livestock and Poultry	3,137	4,001	5,140	27.5	28.5
Total	16,761	26,931	30,610	60.7	13.7

Source: Canada Dominion Bureau of Statistics. Census of Canada, Agriculture, 1961 and 1966 (Ottawa: Dominion Bureau of Statistics, 1961 and 1966), and V. T. Janssen, K. A. Svenson, and W. R. Meeks. Resources for Rural Development Census Division 14 (Edmonton: Alberta Department of Agriculture, Farm Economics Branch, Rural Development Section, December, 1965).

from 1.3 percent of Alberta's farmers in 1961 to 2.1 percent in 1966, the income from the sale of agricultural products had slightly improved from 14 percent of the Province's income to .5 percent during the same period. Table 11 shows that both in 1961 and 1966 the income from the sale of livestock and livestock products constituted the highest percentage of the total income from the sale of the farm products in the region as well as in Alberta.

Cattle production was the major source of income from the livestock and livestock products both in the region and the Province. However, the value of cattle per farm reporting sales in Census Division 14 in 1961 was 27 percent of the provincial figures and in 1966, 39 percent of the provincial figures. The major reason for this difference may be that most of the livestock animals in Census Division 14 were sold as calves and many were of low quality (Table 12).

The distribution of income per farm in 1966 indicated that more farmers were earning higher incomes from the sale of farm products both in Census Division 14 and Alberta as compared to 1961. In 1961, 20.4 percent of the farmers were earning less than \$250 from the sale of farm products as compared to 16.7 percent in 1966. The comparable figures for Alberta were 6.2 percent and 6.8 percent, respectively. The number of farmers earning \$25,000 or more doubled during 1961-66 both in the region and the Province. The number of farmers earning more than \$10,000 increased four times in the region during this period compared to 180 percent increase in the Province (Table 13).

Farm expenditures

The expenditures per farm in Census Division 14 had risen 22 percent during 1961-66 compared to 35 percent increase in the Province. The

Table 11

PERCENTAGE INCOME FROM SALE OF DIFFERENT FARM PRODUCTS
CENSUS DIVISION 14 AND ALBERTA, 1961 AND 1966

	Census Division 14		Alberta	
	1966	1961	1966	1961
Cattle	43.6	28.2	38.0	37.1
Hogs	15.6	20.5	10.1	11.5
Sheep	1.3	2.1	.6	1.0
Poultry and Eggs	2.6	3.4	2.8	2.4
Dairy Products	9.4	12.8	5.4	7.0
Wheat	7.6	5.5	25.6	23.5
Other Grains	8.1	8.1	12.4	9.2
Hay and Fodder	3.4	4.5	1.7	3.9
Root Crops	.8	4.9	1.6	2.0
Forest Products	1.8	3.5	---	---
Other	5.8	6.5	1.8	2.4
Total	100.0	100.0	100.0	100.0

Source: Canada Dominion Bureau of Statistics. Census of Canada, Agriculture, 1961 and 1966 (Ottawa: Dominion Bureau of Statistics, 1961 and 1966.

Table 12

VALUE OF FARM PRODUCTS SOLD, CENSUS DIVISION 14 AND
ALBERTA 1961 AND 1966

	1961			1966		
	Alberta		C. D. 14	Alberta		C. D. 14
	Total	Average Sale per farm	Total	Total	Average Sale per farm	Total
	\$ '000	\$	\$ '000	\$ '000	\$	\$ '000
Field Crops						
Wheat	99,909	2,268	100,000	161,052	3,819	228,000
Other grains	39,062	972	146,000	78,187	2,223	243,000
Hay and fodder	14,541	1,742	81,000	10,731	1,150	106,000
Root Crops	8,466	4,078	89,000	10,095	5,935	23,000
Other field receipts	10,514	299	47,000	4,990	423	67,000
						773
Other Crops						
Vegetables	747,000	1,742	1,000	1,040	2,380	x
						--
Livestock and Poultry						
Cattle	158,015	3,156	510,000	239,248	4,921	1,316
Pigs	48,952	1,324	370,000	63,401	2,287	471
Sheep (including wool)	4,208	1,618	39,000	3,564	1,576	40,000
Horses	1,387	324	69,000	1,289	388	10,000
Hens and Chickens	4,027	679	6,000	5,645	1,718	64,000
				4,481	3,658	7,000
						4,490
Other Products						
Dairy Products	29,788	1,039	323,000	33,761	1,495	284,000
Eggs	5,651	411	51,000	7,758	920	91,000
Forest Products	224	522	63,000	197,198	574	55,000
Other Agricultural Products	7	593	2,000	4,316	6,062	7,000
						758
Total	425,944	5,818	1,900,000	629,551	9,070	3,021,000
						2,959

Table 13

DISTRIBUTION OF INCOME PER FARM, CENSUS DIVISION 14 AND ALBERTA, 1960-61
AND 1965-66

Value of Agricultural Products Sold	June 1, 1960-May Census Division 14 (percent)	June 1, 1961 Alberta (percent)	June 1, 1965-May Census Division 14 (percent)	June 1, 1966 Alberta (percent)
(dollars)				
25,000 and over	.3	2.7	.6	5.8
15,000 to 24,999	.2	4.6	.8	8.5
10,000 to 14,999	.7	7.0	3.0	11.5
5,000 to 9,999	6.4	21.9	11.3	24.7
33,750 to 4,999	6.1	11.7	6.8	9.2
2,500 to 3,449	10.0	18.6	12.0	10.9
200 to 2,499	23.8	12.8	23.7	13.5
250 to 1,199	32.1	13.7	25.1	9.5
Under 250	20.4	6.8	16.7	6.2
Institutional	--	.2	--	.2
Total	100.0	100.0	100.0	100.0

Source: Canada Dominion Bureau of Statistics. Census of Canada, Agriculture,
1961 and 1966 (Ottawa: Dominion Bureau of Statistics, 1961 and 1966.

expenditures per farm in the Province had more than doubled the expenditures per farm in Census Division 14 during the same period. Hired agricultural labour was the main source of expenditures in Census Division 14. In 1961 the average expenditures per farm on hired agricultural labour constituted 59.3 percent of the expenditures per farm and in 1966 this percentage rose to 63.4 percent due to increase in labour wages. Comparable figures for the Province were 44.4 percent for 1961 and 39.9 percent for 1966. The expenditures per farm in Census Division 14 on rent rose by 5.5 percent during 1961-66, and as a proportion of the total expenditures the cost of rent decreased from 28.4 percent in 1961 to 24.5 percent in 1966. Taxes constituted the smallest proportion of the expenditures per farm in Census Division 14 during 1961-66. These comparisons are shown in Table 14.

Summary and Conclusion

Though 25 percent of the labour force of Census Division 14 was engaged in agriculture in 1966, it accounted for only 4 percent of the gross regional product. These figures indicated that the productivity of the agricultural industry in the region was far below standard. Data regarding any changes in the agricultural sector of the economy from 1961 to 1966 related trends which were in all cases below average provincial standards. The first indication of diversion from the provincial trends was that the rural population of Census Division 14 increased 1.7 percent in comparison to the 2.7 percent decrease in the Province. The average size of farms in the region increased but was still significantly lower than the average farm in the Province. Cattle production rose by 78 percent but the value of the cattle reporting sales

Table 14

AVERAGE EXPENDITURES PER FARM IN CENSUS DIVISION 14
AND ALBERTA, 1961 AND 1966

	1961		1966	
	C.D. 14	Alberta	C.D.14	Alberta
Taxes	102	301	122	389
Rent	235	880	248	1,324
Hired Agricultural Labour	491	945	641	1,138

Source: Canada Dominion Bureau of Statistics. Census of Canada, Agriculture, 1961 and 1966 (Ottawa: Dominion Bureau of Statistics, 1961 and 1966).

in 1966 was only 39 percent of the provincial average sales. Though the values of farms in Census Division 14 had increased by 83 percent as compared to 63.6 percent in the Province, in 1966 the value of the average regional farm was still half the value of the average provincial farm. Farm expenditures in the region had increased by 22 percent (again less than provincial expenditures) and more than half the expenditures went on hired agricultural labour. It is evident from these figures that the agricultural sector in Census Division 14 requires vast improvements to meet provincial standards.

APPENDIX II

GOVERNMENT AGENCIES IN CENSUS DIVISION 14

Introduction

Various government departments: namely, Agriculture (ADA), Lands and Forest, Municipal Affairs, Health and Welfare, Education, Canada Manpower Centre, Farm Credit Corporation (F.C.C.), and Highways maintain their regional offices in Census Division 14. All of these offices promote socioeconomic development in the region under the coordinating influence of ARDA. The activities of these Government Agencies are briefly reviewed with special emphasis upon the aims of each as they relate to the objectives of ARDA. Any discrepancies in objectives or lack of cooperation among the agencies will destroy the efficiency of the rural development projects. Therefore, the structural framework of the administration should be examined to find any evidence of areas of conflict so that can be corrected or eliminated.

The Government Agencies

Alberta Department of Agriculture

At the provincial level the Alberta Department of Agriculture and ARDA work closely together in forming the policies of ARDA. Because ARDA's prime purpose is rural development, it requires the advice and assistance of the Alberta Department of Agriculture in making many of its plans for development. The specific aim of the Alberta Department of Agriculture is agricultural growth in Census Division 14. It has initiated the Farm and Home Management courses to deal with the demands and specific problems of the regional farmers. In initiating the Farm or Woodlot Enlargement, Consolidation, and Mobility Project,

and the Rehabilitation Program ARDA received the close assistance and cooperation of the Alberta Department of Agriculture.

Department of Lands and Forests

The agency of the Lands and Forests in Census Division 14 is directly or indirectly involved in many of the sectors of the economy of the region. It maintains an advisory and organizational relationship with forest protection, production, and recreation. It is responsible also for the disposition of homesteads, grazing leases, agricultural land sales, and mineral surface leases of Census Division 14.

As a coordinator the ARDA Office undertook the Farm or Woodlot Enlargement, Consolidation, and Mobility Project to improve forest stand and development in areas used by farms with a high forestry capacity. In another phase of the project the ARDA Office purchased non-viable farms for reselling and consolidation purposes. At the same time the Department of Lands and Forests was selling small parcels of land to homesteaders and undermining the efforts by the ARDA Office for consolidation. Under the Forest Access Project ARDA assisted in constructing access roads into the forested areas to facilitate forest development and improvement. Though the projects exemplify the coinciding aims of ARDA and the Lands and Forests agency, there is need for cooperative policy establishment.

Department of Municipal Affairs

Because Census Division 14 does not have a local government, its sources of revenue and expenditure are under the jurisdiction of the regional agency of the Department of Municipal Affairs. All

services to the region are divided among the respective regional government agencies for execution under the administration of the Municipal Affairs agency. The work of ARDA coincides with this agency more directly than with any other. If ARDA and the Municipal Affairs agency complement rather than compete with each other then duplication of efforts will not occur and the problem of regional development can be more efficiently attacked.

Department of Welfare

In Census Division 14 government assistance payments to individuals are administered by the agency of the Department of Welfare. The Family Allowance, Old Age Pensions, and Welfare Assistance are such payments. The policy of the ARDA Office is to decrease the number of welfare clients as exemplified by the Home Visitors' Program.

Department of Education

One purpose of the Department of Education in Census Division 14 is to raise the educational level of the region, which has been lower in the past than provincial averages. It administers the public school system and offers additional courses in adult education and training. ARDA is interested in training and educating school dropouts and others interested in academic upgrading and retraining and promoting an interest in technical improvement. This is instituted through the Rehabilitation Program for Census Division 14 which seems to duplicate the efforts of the Education Department.

Canada Manpower Center

The purpose of the Canada Manpower Center in Edson is to offer employment opportunities to the people in the region as well as to rehabilitate and reestablish unemployed persons. When the ARDA Office

attempted to establish the Rehabilitation Program, there was a conflict with the Canada Manpower Center. There was no consensus about the importance of academic upgrading or retraining as the initial step. This issue will continue to arise in future ARDA efforts of this nature. If the two agencies cannot agree on basic terms, it is doubtful that there will be successful cooperation in present or future programs.

Although all agencies play important roles in the development of the region, only the F.C.C. and the Department of Highways were selected for close study. An analysis of their participation should exemplify how the many other agencies work within the regional development structure.

Description of the Selected Government Agencies

Farm Credit Corporation

Introduction--The Farm Credit Corporation was established in 1959 out of the Canadian Farm Loan Board (C.F.L.B.).¹ A branch office of the Farm Credit Corporation exists in Evansburg, Census Division 14. Long-term mortgage loans can be secured for purchase of land, improvements of lands and buildings, discharge of liabilities, or any purpose which the Corporation may consider necessary for the assembly and operation of an economic farm unit family.

¹ Canadian Farm Loan Act is described in the Canada Year Book, 1956 (22), p. 392 in the following words:

... under this Act long-term farm mortgage credit is available to the Canadian Farm Loan Board, established in 1929. Loans repayable on an amortized plan with equal annual payments over periods not exceeding 25 years are made to buy livestock, farm equipment and may lend up to 60 percent of appraised value and up to \$10,000 on first mortgage, and up to 70 percent and \$12,000 on combined first and second mortgage.

Loans are provided if the following conditions are met. First the principal occupation of the applicants must be farming. (Loan provisions are made for part-time farmers under the "Supplementary Off-farm Loan" and the "Cooperative Farm Association and Family Farm Corporation Loans"). Secondly, a suitable plan must be provided for the organization of a farm unit capable of producing sufficient income to meet all operating costs, of producing an adequate standard of living, and which will enable an orderly repayment of the required credit. The applicant must have a first mortgage on land owned or purchased with loan assistance taken as security. Part II loans for land security can be secured on real estate only. The maximum amount of loans made under Part II is \$40,000. Part III loans for land,

¹Part II and Part III Loans are named after Veterans' Land Act which is described in Canada Year Book, 1967 (23), p. 335 in these words:

The Veterans' Land Act, enacted in 1947 and broadened extensively in scope and financial provisions since then, provides financial, technical, and supervisory assistance to World War II and Korean Force veterans to enable them to engage in agriculture on a full-time and part-time basis; to acquire and improve homes; and to settle on provincial, federal, and Indian reserve lands. The Act was last amended in June 1965. Provisions were made for substantially higher ceilings in the various categories of loans -- from \$20,000 to \$40,000 for full-time farmers on economic farm units, from \$12,000 to \$18,000 for small family farmers, \$10,800 to \$16,000 for small holders (part-time farmers) and from \$12,000 to \$18,000 for veteran's building houses. These amendments make the financial assistance available under the Act comparable to the National Housing Act. Other amendments provide for the financing of secondary enterprise - farm equipment repair shops, tourists facilities, etc. -- for the small family farmers; the payment of related debts "reasonably incurred"; the embodiment of the balance of the previous loans in new farm loans; and the authority for the Director to assist veterans in the initial financing of an establishment of the repayment of re-establishment credit for rehabilitation grants.

livestock, and equipment security and are made to individual farmers between the ages of 21 and 45 with five years of farming experience. These loans may be secured on a first mortgage on real estate, livestock, and equipment, with the maximum loan being \$55,000 or 75 percent of the acceptable security.

Under Part II the rate of interest ranges from 5 to 5 1/2 percent on the unpaid balance for loans up to \$20,000. Under Part III the rates of interest range from 6 3/4 to 7 1/4 percent for loans over \$27,500. The loans are amortized for up to 30 years (38).

Farm Credit Corporation Loans in Census Division 14--The number of loans and the amount lent to the farmers in Census Division 14 through the Farm Credit Corporation has risen steadily from one loan valued at \$1,000 in 1948 to 34 loans valued at \$573,803 in 1966. The number of loans made by the Farm Credit Corporation accounted for 3.3 percent of the farmers in Census Division 14 as compared to 4.2 percent of the farmers in Alberta and 2.6 percent nationally. This increase was due to an emphasis on farmland and building improvements; increased values of land, livestock, and machinery; and higher numbers of farmers seeking loans. During the period between 1948 and 1960, \$137,850 were made available to 30 farmers in Census Division 14. During the 1961-64 the amount lent was \$738,400 to 80 farmers. The comparable figures for the period between 1965 and 1966 were \$852,830 to 60 farmers. The average loan during 1965 was 72.5 percent higher than that during 1961-64 and 2 1/2 times greater than during 1948-61 (38).

The distribution of loans per farm indicates that 20 percent of the farmers obtaining loans in Census Division 14 received over \$10,000 during 1948-64. Furthermore, no loan was made above \$20,500. Nine

percent of the loans were less than \$2,500. In 1965, 57.7 percent of the farmers received above \$10,000 and 26.9 percent above \$20,500. There was no loan below \$5,000. In 1966, 91.2 percent of loans were above \$10,000, 20.6 percent above \$20,500, and no loan below \$7,500. These comparisons are given in Table 15.

For the period of 1948 to 1964 the average loan was \$7,930. The amount increased to \$14,577 in 1965, and further to \$16,896 in 1966. These loans had standard deviations¹ of \$3,910, \$9,043, and \$6,643 and were within ranges of \$1,000-17,000, \$6,000-31,000, and \$8,000-39,4000 for the respective years. The respective comparable coefficients of variance for the 3 periods were 49 percent, 62 percent, and 39 percent. (Table 16).

Purpose of loans--From 1961 to 1964, 31.5 percent of the total number of loans made available to the farmers in Census Division 14 were used for the purchase of land. The comparable figure for 1965 and 1966 were 47.4 percent and 59 percent respectively. The number of loans for improvement purposes had been decreasing during 1948-66. From 1948 to 1964, 23.1 percent of loans were allocated to clearing and breaking. By 1965 only 12.1 percent of the loans were used for this purpose, and in 1966 the percentage decreased slightly to 12 percent. Table 17 illustrates the proportions of loans made for different purposes in the region.

Role of ARDA--Although the Farm Credit Corporation and ARDA are

¹In a population with a normal distribution about 68 percent of the measurement fall within a distance of one standard deviation of the mean or about 95 percent of measurements fall within a distance of two standard deviations of the mean, (105), pp. 34-52.

Table 15

PERCENTAGE DISTRIBUTION OF LOANS BY SIZE IN CENSUS
DIVISION 14, 1948-64, 1965, AND 1966

Size of Loans (dollars)	1948-64	1965	1966
2,500 and less	9	--	--
2,501 - 5,000	10	--	--
5,001 - 7,500	25	11.5	--
7,501 -10,000	36	30.8	8.8
10,001 -12,250	7	7.7	17.6
12,251 -15,000	7	11.6	32.4
15,001 -20,500	6	11.5	20.6
Over 20,500	--	26.9	20.6
Total	100.0	100.0	100.0
Total Number of Loans	110	26	34

Source: Farm Credit Corporation, "Statistics of Loans in Edson Area, Census Division 14" (Unpublished Material, Evansburg, Alberta: Farm Credit Corporation, 1967).

Table 16

FARM CREDIT CORPORATION LOANS IN CENSUS DIVISION 14, 1948-64, 1965, AND 1966.

Total Loans (\$)	Number of Loans (No.)	Average Loan per Year (No.)	Average Loan (\$)	Standard Deviation of (\$)	Coefficient of Variance (%)	Maximum Loan per Farmer (\$)	Minimum Loan per Farmer (\$)
1948-64 872,250	110	6.5	7,930	3,910	49	17,000	1,000
1965 379,000	26	26	14,577	9,043	62	31,000	6,000
1966 573,603	34	34	16,876	6,643	39	39,400	8,000

Source: Farm Credit Corporation, "Statistics of Loans in Edson Area, C.D. 14"
(Unpublished Material. Evansburg, Alberta: Farm Credit Corporation, 1967).

Table 17

PERCENTAGE OF LOANS BY TYPE IN CENSUS DIVISION 14,
1948-64, 1965, AND 1966.

Type of Loan	1948-64	1965	1966
Purchase of Land	31.5	47.4	59
Clearing and Breaking	23.1	12.1	12
Buildings	8.1	11.5	10
Livestock Purchase	18.6	12.2	19
Others	18.7	16.8	--
Total	100.0	100.0	100.0

Source: Farm Credit Corporation, "Statistics of Loans in Edson Area, Census Division 14" (Unpublished Material. Evansburg, Alberta: Farm Credit Corporation, 1967).

independent institutions, both are the provisions of the Federal and Provincial Governments and both are involved in the rural development. It is important that ARDA, working in an organizational capacity for farmers, and the Farm Credit Corporation, established as a source for financial assistance in farming organization, correlate their work for the ultimate gain of the farmer. The Farm or Woodlot Enlargement, Consolidation, and Mobility Project and Development of Arable Land for Agricultural purposes will increase the need of farmers for more credit.

In Census Division 14 the Edson ARDA Office and the Farm Credit Corporation were working independently, though they had both attended the meetings sponsored by one another. The attempt at cooperation was made, but effects were negligible. The ARDA Office at Edson began operations in 1964 and in the next two years its work was mainly of an organizational nature. Its influence was not felt effectively by the farmers until 1966. Therefore, ARDA could not have had significant influence upon the Farm Credit Corporation transactions with the farmers.

With the introduction of ARDA's Development of Arable Land for Agricultural Purposes Project in 1966, applications to the Farm Credit Corporation decreased. The decrease might have been an indication of ARDA's influence upon the farmers but it should be noted that there was a general provincial trend that year of decreasing applications to the Farm Credit Corporation due to increased costs of farming operation.

Alberta Department of Highways

Introduction--In an effort to determine the relationship of ARDA with regional agencies in Census Division 14, the role of the Department of Highways in Census Division 14 should be studied. Especially in this case the activities and objectives of the Edson Office depend on the activities of the Highways Department.

The purpose of the Highways agency in Census Division 14 is to coordinate, provide, and maintain the road system in accordance to the economic and social needs of the people. The provision of an adequate system of roads will not only facilitate the activities of ARDA in the recreational, industrial, and rural and urban areas but will also facilitate transportation for the people. Since ARDA is directly concerned with the economic and social standards in Census Division 14, ARDA must be concerned with the adequate provision of a communication system for the region.

Existing road system in 1966--The road systems existing in Census Division 14 in 1966 are studied to determine their adequacy. These roads are evaluated in terms of mileage, quality, and the needs of the districts in which they are found.¹

To determine the adequacy of existing roads, it is necessary to examine the population densities, land use patterns, and total areas of each district. Improvement Districts 78 and 95 have the highest rural and urban populations (Table 18) and the greatest areas (only Improvement District 96 has the greater area). Also of the zones transferred to agriculture, the major portions lie within these two districts.

¹Roads are classified by the Alberta Department of Highways into Paved, Graded and Gravelled, Gravelled, and Trail. The qualities of these are further determined according to the following standards: Good width - those roads of 24 feet or greater. They have smooth cross sections with flat side slopes and broad ditches, and they give good performance under all conditions. Fair width - those of 20-23 feet with side and back slopes steeper than the above, but not vertical. They occasionally need more than routine maintainance. Light - those roads of less than 20 feet. They have wide V ditches, steep slopes, and are occasionally impassable (4), pp. 37.

Table 18

POPULATION OF IMPROVEMENT DISTRICTS WITHIN REGION,
(EXCLUDING TOWNS AND VILLAGES), 1961 AND 1966.

Improvement Districts	1961	1966
78	3,484	3,618
79	667	489
95	3,638	3,148
96	430	553
109	2,351	1,456
Total	10,570	9,264

Source: Alberta Department of Highways, Planning Branch.
"Secondary Road System, Study Area 19" (Edmonton:
Alberta Department of Highways, May 1967).

Improvement District 109 having the largest rural population incorporates only a small portion of the total agricultural land in Census Division 14. Most of the Improvement District is composed of Green Zone that provides important forest resources. Improvement Districts 79 and 96 have the smallest rural and urban populations. Neither have land suitable for agriculture; therefore, they are committed almost completely to recreation, mineral, and forestry industries.

According to Table 19, Improvement Districts 78 and 109 have the greatest mileage including all road classes and also the greatest mileage of gravelled and graded roads. In any of the Improvement Districts there is a lack of paved roads. Though Improvement District 95 has a greater rural and urban population and greater area than Improvement District 109, it has a fewer miles of public road. It does have however, the greatest mileage of industrial access roads.

The trend is to improve the centralized localities at the cost of improving road conditions in the less populated areas of Improvement Districts 79 and 96 (Table 20). Aside from inadequacies existing in Improvement District 95, the policies of the Department of Highways will increase the efficiency and effectiveness of ARDA in centralized areas. One of ARDA's major aims in Census Division 14 is to buy all the farms in the Green Zone and convert them to forest production. Eventually, therefore, the few farms that do exist in these zones will be purchased and transportation facilities will be required only for recreational and industrial purposes.

ARDA Forest Access Projects--The ARDA Office, realizing that the Highways Department was concentrating its efforts in the agricultural

Table 19

SUMMARY OF EXISTING ROAD MILEAGE 1966, CENSUS DIVISION 14,
1966.

	Improvement Districts					Total
	78	79	95	96	109	
Paved						
Good						
Fair			4			4
Light						
Gravel and Graded						
Good	175		71	31.6	86	363.6
Fair	163		63	45	120	391
Light	104	24	69	6	26	229
Graded						
Good	2		2	22	7	33
Fair	22		20			42
Light	27		21		29	77
Trail	7		2		31	40
Total	500	24	248	104.6	299	1,175.6
Oil and Lumber Roads			39		46	85
Land and Forest Roads	5	55	79	100		239
Main Highways	67.1	63.2	96.1		47.5	273.9

Source: Alberta Department of Highways, Planning Branch,
 "Secondary Road System, Study Area 19" (Edmonton:
 Alberta Department of Highways, May 1967).

Table 20

FISCAL STATISTICS FOR EXISTING ROAD SYSTEM, CENSUS
DIVISION 14, 1962-66
(in dollars)

Improvement District	Expenditures for Roads	Grants			Total
		Grants for I.D. Roads	Natural Resources	Winter Works	
I.D. 78	1,896,532	1,091,269	36,552	194,472	1,322,293
I.D. 109	1,200,320	565,388	118,855	208,829	893,072
I.D. 95	1,007,615	601,218	5,193	96,778	783,189
I.D. 96	103,035	60,521	15,478	9,317	85,316
I.D. 79	41,384	7,408	20,264	--	27,672
Total	4,248,876	2,325,804	276,342	509,396	3,111,542

Source: Alberta Department of Highways, Planning Branch, "Secondary Road System, Study Area 19" (Edmonton: Alberta Department of Highways, May 1967).

and industrial areas, offered the Forest Access Project.¹ The construction of 191 miles of access roads into the Green Zones of Census Division 14 over an eight-year period from 1967 to 1975 was recommended. The roads will help create a forest industry, thus generating employment for local people. The roads will also open up remote areas for recreational activities. However, unless the forest industry can be assured and there are additional efforts by ARDA to attract hunters and campers, the roads may not be productive.

Grading projects in 1964-67--The maintenance of roads in Census Division 14 is also under the jurisdiction of the Department of Highways. Because most of the roads in the region are not paved, grading projects are essential to maintain the roads in adequate condition.

Tables 21 and 22 indicate that access roads are being attended to more than all other roads. The case of transportation is thus facilitated not only for the ARDA workers but for the population of the region as well.

From Table 23 it is calculated that during 1964-67, 6.75 miles of roads with a traffic volume of one vehicle per day were maintained at a cost of \$18,000.² Similarly 13.16 miles of roads with a traffic flow of one vehicle in 20 days were graded at a cost of \$12,500. These expenditures might have been more valuable if used to construct additional access roads in Improvement District 95, the area that did not receive adequate attention by the Highways Department.

¹Refer to Part V, Section 28 (2) of the Federal-Provincial Rural Development Agreement (12).

²Calculated during the preparation of Table 23, from Source 3.

Table 21

PERCENTAGE OF TOTAL MILEAGE AND TOTAL COST OF GRADING
PROJECTS BY PURPOSE, CENSIS DIVISION 14, 1964-67

	Access		Safety		Mixed	
	Miles	Cost	Miles	Cost	Miles	Cost
1964	36.5	24.8	36.1	48.2	27.4	27.0
1965	55.4	54.1	21.4	27.4	23.2	18.5
1966	41.6	41.7	39.3	40.3	19.1	18.0
1967	57.0	41.3	27.6	41.2	15.4	17.5

Source: Alberta Department of Highways, "Grading Projects in Census Division 14" (Unpublished Material. Edson, Alberta: Alberta Department of Highways, 1967).

Table 22

PERCENTAGE OF TOTAL MILEAGE AND TOTAL COST OF GRADING
PROJECTS BY CONDITION OF ROAD SURFACE, CENSUS DIVISION
14, 1964-67

	Good		Fair		Light	
	Miles	Cost	Miles	Cost	Miles	Cost
1964	46.6	63	33.1	31	20.3	6
1965	58.1	86	12.8	6.5	29.1	7.5
1966	69.9	91.2	19.1	5.6	11	3.2
1967	57.5	82.3	29.7	13.1	12.8	4.6

Source: Alberta Department of Highways, "Grading Projects in Census Division 14" (Unpublished Material. Edson, Alberta: Alberta Department of Highways, 1967).

Table 23

PROJECTS UNDERTAKEN FOR RELATIVE VOLUMES OF TRAFFIC, CENSUS DIVISION 14, 1964-67.

Zone	Traffic Volumes Per Day	Purpose	Miles (units)	Cost (\$)	Cost Per Mile (\$)
Brown	0-1	Access	24	103,200	4,300
	0-1	Safety	3.1	5,000	1,613
	0-1	Mixed	--	--	--
	1-5	Access	15.65	105,200	6,721
	1-5	Safety	.8	15,000	18,750
	1-5	Mixed	8.5	79,000	9,300
Yellow	0-1	Access	11.1	60,200	5,423
	0-1	Safety	--	--	--
	0-1	Mixed	--	--	--
	1-5	Access	1	5,000	5,000
	1-5	Safety	.5	6,000	12,000
	1-5	Mixed	--	--	--
Green	0-1	Access	7.7	23,200	3,013
	0-1	Safety	--	--	--
	0-1	Mixed	--	--	--
	1-5	Access	4.5	51,000	11,333
	1-5	Safety	5.5	75,000	13,636
	1-5	Mixed	3.2	45,000	14,062

Source: Alberta Department of Highways, "Grading Projects in Census Division 14" (Unpublished Material. Edson, Alberta: Alberta Department of Highways, 1967).

ARDA maintained that the Green Zone should be purchased from the private farmers and reforested. Accordingly roads costing the most per mile were constructed in the Brown Zone. However, the figures of Table 24 indicate that the average cost per mile in relation to the number of vehicles using the roads was greater in the Green Zone than Yellow and Brown Zones. This additional cost arose from the mountainous terrain and unbroken lands of the Green Zone.

Conclusion

Close cooperation between ARDA and the Government Agencies in Census Division 14 is necessary if ARDA is to be successful. Within the structural framework of the development program, ARDA exists as a coordinator and initiator of various projects directed at most social or economic aspects of the region. The agency descriptions indicated that the aims of each agency were related to those of ARDA and, furthermore, that ARDA's activities were very much dependent upon their cooperation.

The study of the Farm Credit Corporation and the Highways Agency revealed the extent of cooperation achieved. Data regarding Farm Credit Corporation transactions for the period 1964 to 1966 indicated that ARDA had little if any influence upon the Farm Credit Corporation activities. Future influence may be anticipated when ARDA's Farm or Woodlot Enlargement, Consolidation, and Mobility Project and Developing Arable Land for Agricultural Purposes Project become fully realized.

The policy of the Highways Department in concentrating expenditures in primarily agricultural zones in which population density was greatest

directly benefitted ARDA activities. In a coordinating effort ARDA proposed the Forest Access Project. However, the Highways Department was already incurring losses in maintaining roads in the Green Zone. ARDA has failed to see the immediate needs to improve access roads into existing scenic and recreational areas, and to improve and construct roads in the Brown and Yellow Zones. There is a need for close consultation with the Department of Highways before this project is initiated.

The agencies and ARDA must agree on basic issues to enable implementation and must cooperate on all other issues to provide smooth functioning. If these criteria are not met, ARDA cannot continue effectively as a coordinator in the region.

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